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at January 2007



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The Edinburgh Natural History Society was originally founded in 1869 and incorporates the Edinburgh Field Naturalists and Microscopical Society, instituted in 1881. The Society was instituted for the study of natural history in all its branches, and for the encouragement of public interest and concern in these matters.

An indoor talk is held on one Wednesday every month from September to April, in the Guide Hall, 33 Melville Street at 7.30pm. Posters of date, time and topic are in all libraries. All are welcome. Outdoor excursions are held throughout the year. A copy of the programme for Summer 2007, and details of membership of the Society can be obtained from the Secretary.



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PRESIDENT'S RAMBLINGS

Welcome to another remarkable example of the variety of interests and expertise that exists among the Edinburgh Natural History Society members. As you read this year's Journal, I'm sure that you will be as impressed as I am to see the large number of our members who have once again contributed to its production. More than 40 members have taken time to supply articles (on over a dozen different subjects), photographs, wildlife sightings and drawings. Our thanks go to everyone who generously makes the effort to provide the 'ingredients' that make our Journal the achievement that it undoubtedly is.

I would like to take this opportunity, in what will be my last Presidential contribution to the Journal, to offer my great thanks to everyone who has contributed to the on-going success of the Society over the past three years. This includes our efficient, hard-working Secretary Joanie Fairlie and Treasurer Jane Squirrel; the other Council members, who have ensured the continued smooth running of the Society; the Excursion Committee who year after year provide a rich and varied programme of year-round excursions for our members; those members who contribute to the production of the Journal; Margaret Perry for organising an interesting and varied programme of winter speakers; our 'tea-ladies and gentlemen'; Janet Watson for organising another super Christmas party; and, of course, all the members who contribute to the Society by taking part in excursions and indoor meetings. My thanks to you all for making our Society a truly enjoyable experience.

As many members will be aware, we are currently looking for nominations or volunteers for members to join Council at the AGM in October. We have vacancies for President, one Vice President and three ordinary members. Although October seems a long way off please think it over now! If anyone is interested and would like to know more about the role of the Council members, please do contact myself or the secretary.

Natalie Taylor

ANOTHER 'THANK YOU'



A special 'thank you' goes to Munro and Frances Dunn. We have enjoyed the many places you have taken us over the last 15 or so years. We are sorry that you have decided to 'retire'. We shall miss your walks, often some of the more challenging ones on the programme - H1 or H2!

BIRDING IN A GOOD CAUSE

As many of you will be aware, during 2006 I undertook a sponsored birdwatch to raise money for Alzheimer's Scotland. This was prompted by the death in 2005 of one of my best friends from the disease. We became friends nearly 15 years ago through a shared love of birds and birding, so this seemed a fitting tribute.

The parameters were simple – no twitching, no exceptional trips, just see as many different species as possible in a normal year's birding. Over the year I managed a total of 169 different species, two of which were new for my life list - Dotterel and Shore Lark.

Some of the year's highlights included: Little Egret, Bittern (in the Lothians), Water Rail, Marsh Harrier, Avocet, Spoonbill (a big surprise when popping into 'one last hide before we leave!'), Dotterel with chicks on top of Cairngorm (a lifer and a new Munro bagged in one day!), Red-necked Grebe at Duddingston Loch, Goshawk (a superb fly over during a friend's wedding – no bins!), Woodcock (roding overhead during a Bat roost count), Shore Lark (well maybe this was a little bit 'twitchy', but it was at my local patch), and Red Kite. Not only were certain species special, but some of the trips were too: exploring new sites including Rutland Water, visiting old favourites, woodland valleys in early May, local patch in all seasons and weathers, coast, woodland, rivers, mountains, parks, reserves, and so much more. Every trip was a reminder of the joy that I find in birding, something that is sometimes lost in the hustle and bustle of work and other commitments.

I'd like to take this opportunity to thank everyone who was kind enough to sponsor me, so far enabling me to raise nearly £500, and of course to add that anyone who would still like to make a contribution is welcome to do so!

Natalie Taylor

WEEDS, WEEDS, WEEDS

Elizabeth Farquharson



Those of us who have gardens get tremendous pleasure from the colour and variety throughout the year, and a feeling of achievement when digging one's own potatoes and picking one's own fruit. But with all good things there is a downside as well, and that is the

weeding. Weeds are a merciless taskmaster reappearing in areas that have been cleared only recently. In fact, weeding has much in common with the painting of the Forth Rail Bridge!

I decided this year that I must find a way of making the weeding less of a chore and more enjoyable. So, at the beginning of May I started a new routine. Every weed had to be identified correctly, not casually and often incorrectly as in the past. This meant a welcome break in the weeding while the offending weed was brought indoors and identified accurately.

By the end of the first day I realised that identification would have to go one stage further. Many had discoloured leaves, others had black spots, or a white film over the surface, and some had orange areas on leaves and stems. Fortunately there is a wonderful book by Ellis and Ellis called *The Microfungi of Land Plants*. Both cultivated and wild plants are listed and under each are descriptions of the microfungi that are specific to that plant. In most cases only one description fits the specimen you have in hand. This may be a lazy way of identification, but if one had to do the identification more scientifically, there would be no time left for weeding!

Many of the diseases affecting plants belong to the groups known as Rusts, Smuts and Mildews. Rusts are frequently brightly coloured, as their name implies, and have a complicated life history, often using two different hosts for different stages of their development. Smuts look rather like soot and are less common. None were found in the garden, but perhaps they were there and I failed to recognise them. Mildews were plentiful. They are divided into Powdery Mildews and Downy Mildews. Powdery Mildews produce a white haze on the upper surface of the leaves and in the field they all look much the same. As the infection remains on the surface of the leaf, and does not invade the tissue, there is no discoloration.

How did the weeding and identification progress? During May and June so much identification was going on that the weeding suffered! Rusts were found on Bluebell leaves, Wild Rose, Mahonia, Broad-leaved Willowherb, Bramble, and Couch Grass. Rusts found on Groundsel and Stinging Nettle were particularly

spectacular as the rusts produced bright orange patches of tiny cups, and on the Stinging Nettles where the rust was on both leaves and stem there was marked deformity of growth. These cluster cups on Groundsel were everywhere, and less commonly the same one is sometimes found on Daisies.

A few weeks earlier I had treated a patch of Daisies with the weedkiller Verdone. An unexpected shower of rain diluted the weedkiller and the Daisies survived. This patch, and only this patch, became heavily infected with the Groundsel rust. Powdery mildews were found on Forget-me-not and Broad-leaved Willowherb.

During July a few of the larger fungi started to appear. Dryad's Saddle *Polyporus squamosus* was on a Buddleia, where it has fruited regularly for several years. More rusts were found on Petty Spurge and Bellflower while Dandelions and Blackcurrant bushes acquired powdery mildews. There was more variety during August. A young Sycamore, heavily infected with Tar Spot, was found in the shrubbery and *Paxillus involutus* appeared on the gravel, the lawn, and in the flower beds. A single False Chanterelle adorned the lawn. Meanwhile powdery mildews had formed on Rhododendron and Michaelmas Daisy and rusts were present on Bramble leaves, Broad Bean leaves and Sowthistle. By the end of the month four Waxcaps were on the lawn while *Lactarius plumbeus* and *Amanita crocea* were found under a Birch tree.

During September, much that was found had been seen earlier on, but October and November produced *Agaricus langei* and *Lactarius deterrimus* under a Spruce tree, *Calocybe carnea* in grass under a Crab Apple tree, *Agaricus bisporus* in the middle of a path, and *Macrolepiota rhacodes* under a Chestnut. The compost heap produced *Lepista nuda* and some huge *Clitocybe nebularis* and *Pholiota squarrosa* appeared for the first time in the garden at the base of a Cherry tree.

And now, in December a sheet of *Tubaria* growing on wood chips is covering the area where the Aconites grow. Two years ago I counted over 200, but last year there were only a few. There have been two examples of fungi being fussy over their hosts. Two slightly different Brambles grow side by side on a wall; one has been heavily infected with a rust and the other has remained unscathed. Two Rhododendrons grow so close together that their branches are intertwined; while one was covered with a powdery mildew the other was unscathed.

This year the number of fungi in the lawn has been disappointingly low compared with over 21 last year. Provided my garden continues to produce a good crop of weeds I should be able to produce a better tally next year.

In the 2004 ENHS Journal I reported on the increase in the number of sightings of Dragonfly and Damselfly species that were new to Scotland, having moved north, probably due to global warming. 2006 has witnessed a quite remarkable continuation of this movement. The Emperor Dragonfly *Anax imperator* was present at the same farm pond near Eyemouth during the summer of 2005, and one arrived at the pond on the 8th of July 2006. It was a female and 6 goggle-eyed observers watched it for half an hour, egg-laying into the floating vegetation. This prompted investigation of other potential odonata sites nearby.

During July the Black-tailed Skimmer *Orthetrum cancellatum*, a new species for Scotland, was recorded at 2 sites in Berwickshire. Likewise Red-Veined Darters *Sympetrum fonscolombii*, another new species for Scotland, was recorded from several sites in the area. The usual populations of Common Darters *Sympetrum striolatum*; Common Blue Damselflies *Enallagma cyathigerum*; Azure Damselflies *Coenagrion puella*; Emerald Damselflies *Lestes sponsa* and a male and a female 4-spot Chaser *Libellula quadrimaculata* were present in the area also.

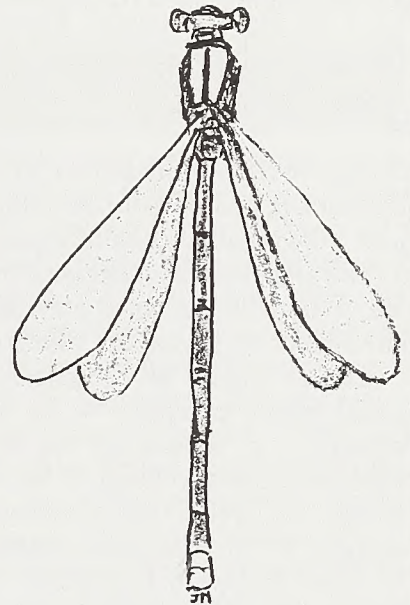
The 'icing on the cake', however, appeared near St. Abbs in September. The Migrant Hawker *Aeshna mixta*, smaller than our Common Hawker *Aeshna juncea*, and a newcomer to the area which flies in late summer, was seen at the same site until mid-October.

Betty Smith

EMERALD DAMSELFLY AT HUNTER'S BOG

As a follow-up to Graham Checkley's interesting article, in last year's Journal, on the Damselflies and Dragonflies of Holyrood, Duddingston and Bawsinch, on 23rd July we observed a potential breeding population of Emerald Damselfly *Lestes sponsa* at Hunter's Bog. According to Graham Checkley's article, this species had not been observed at any of the above mentioned locations during 2005. Although the pond in Hunter's Bog was practically dry, we saw several individuals, as well as at least ten copulating pairs in the vegetation at the pond's margin. The lack of water in the pond does not pose an ovipositing problem for the Emerald Damselfly, as its eggs may over-winter on the vegetation above the water level, awaiting rising water levels before hatching in spring. The Emerald Damselfly is easy to recognise: unlike all other Scottish Damselflies, which hold their wings along their abdomen when at rest, the Emerald Damselfly holds its wings at 45° angle away from its body. For more information on Dragonflies and Damselflies, visit the British Dragonfly Society web site at www.dragonflysoc.org.uk.

Jane Squirrell & Graham French



MAYFLIES

Mayflies are often called *fishing flies* as they are valuable food for fish and are the models for many of the anglers' artificial flies. They belong to the order *Ephemeroptera*, from the Greek *Ephemeros* meaning 'living for a day'. As adults their life is very short; some may emerge in the evening and be dead by morning. This follows a much longer nymphal development involving many moults. Most Mayflies complete their life cycle within one year.

Final instar nymphs stop eating and after a short while, climb plant stems or float or swim to the surface of the water. Within seconds the nymphal skin splits and a winged insect emerges. In contrast to most freshly emerged insects, they can fly right away, although direction depends largely on air currents. This is not the mature Mayfly, but the sub-imago, the fisherman's *dun*, which is dull in colour, due to a covering of hairs which is thought to assist emergence from nymphal skin by preventing wetting.

Mayflies are unique among insects, in that they moult again after attaining the winged state. A sub-imago that finds a suitable resting place has a final moult, sometimes within minutes, to become the shinier mature adult or imago, known as a *spinner*. The flies then mate in the air and the eggs are laid within an hour or so. Some species drop eggs into the water; others may descend into the water and lay on submerged plants. Having fulfilled their purpose the spent adults fall on to the water and become food for the fish.

Lyn Blades

SCOTLAND - LAND OF LICHENS

Chris Ellis

Royal Botanic Garden Edinburgh

Scotland's Lichen Diversity

At the Rio Earth Summit in 1992, the UK government ratified the *Convention on Biological Diversity*. The stated aim of the convention was to protect 'biodiversity' – the accumulated riches of evolution, the variety of species, and their genetic variation. Since this time a certain map has popularly appeared under different guises, but more or less entitled 'Global Biodiversity Hotspots'. Red areas on the map identify the hotspots. These often equate to regions with a plentiful supply of warmth and moisture (e.g. the tropics), where a wealth of the planet's physical resources can be divided into myriad niches, catalysing evolution. The map also identifies areas of environmental stability, e.g. the Mediterranean or the south-east U.S.A., where periods of uninterrupted ecosystem development (at least until recent human impacts) have allowed time enough for increasing specialisations and speciation. Scotland doesn't appear on the map: its environment is generally cool, stormy and it has just appeared from underneath an ice-cap.

A staggering 1500 lichen species call Scotland home

The map of Global Biodiversity Hotspots is somewhat controversial, and it could be criticised for presenting a biased viewpoint. As naturalists, our native habitats and flora and fauna are cherished for their own intrinsic value. Moreover, the map chooses to measure only a small subset of biological diversity. Species richness of vascular plants is popularly measured, though vascular plants comprise < 14 % of total 'botanical diversity', i.e. including the cryptogams: mosses, liverworts, algae and fungi. If the map measured lichen diversity, it would be a different story: Scotland comprises 37 % of European lichen diversity in about 0.75 % of European land area. It is because of this concentration of diversity that Scotland is one of the best places in the world to be a lichenologist, comparable in real terms to such renowned places as New Zealand, Pacific British Columbia, or the Scandinavian Boreal and Tundra zones. Why? Because unlike salamanders or begonias or humming-birds, lichens have an adapted capacity to exploit the kinds of habitats we find in Scotland, and the habitats we find in Scotland are themselves tremendously varied and therefore exploited by a multitude of lichens that occupy myriad niches. Lichens are in a sense Scotland's home-grown biodiversity; the lichens growing across a cliff can be as rich as the trees in a rainforest. A staggering 1500 lichen species call Scotland home.

The wealth of lichen habitats in Scotland is related to climatic variation, itself augmented by Scotland's complex topography, by geological variety, by our unpolluted environment and by ecological continuity. Lichens are central to the wilderness experience a

Scotland is one of the best places in the world to be a lichenologist

naturalist cherishes, the assemblage of lichen species is part of the education gleaned from the environment, and in Scotland the lichens truly open new horizons. No need to fly to Svalbard, Oulu or Vancouver; we can travel briefly from Edinburgh, and experience arctic tundra, boreal forest or temperate rain forest. How is this possible? Look to the lichens.

Tundra

Lichens are the ultimate stress-tolerators

In a sense, the tundra is a habitat to which lichens are supremely adapted. In a famous piece of ecological insight, Philip Grime suggested that all plant species are evolutionarily adapted to maximise trade-offs between three essential 'life histories'. The life history of a competitor (e.g. spend time growing tall, out-competing weaker, shorter-lived species), of a ruderal (e.g. grow fast, produce plentiful small seeds rapidly, and move on to a new ephemeral patch before the competitors arrive), and of a stress-tolerator. Lichens are the ultimate stress-tolerators, and the tundra is a stressful place. The tundra is cold and dry, often rocky, and with thin soils and poor break-down of the small amount of organic matter available. Plants struggle to make ends meet in the tundra, and they struggle particularly to find enough mineral nutrition (e.g. nitrogen and phosphorus). Vascular plants run into a law of diminishing returns, producing more and more root (searching for the nutrients) for each small amount of shoot. The problem arises because root growth is itself limited by shoot growth, i.e. photosynthesis and carbon fixation is dependent on shoots, whose leaves provide the raw material for extra root growth. Not bothering with impossible trade-offs between roots and shoots, the lichens have a radical solution. Instead of splitting the organ of nutrition (root) and organ of photosynthesis (shoot and leaves), they build a single structure (thallus) out of a fungal body that can capture > 95 % of atmospheric nitrogen (no need to compete for soil nitrogen), and within the same body they farm a population of algae. The algae photosynthesise, providing carbon for growth, and are in turn protected within the fungal thallus from the harsh environment, e.g. by special chemicals ensuring they're neither too dry nor too wet, and that they're protected from UV light and herbivores.

As you move towards the polar regions the dominance of vascular plants decreases and they become less diverse, while the ground cover and dominance of lichens increases. Nevertheless, it's not as if all lichens uniformly increase in abundance in the tundra; certain lichens are characteristic of tundra habitats.

We can see some of these species in the Scottish mountains, where the growth of vascular plants is diminished by the effects of cold or wind, e.g. *Alectoria nigricans*, *Cetraria islandica* and *Thamnolia vermicularis* can all be found growing where the plant canopy opens out. In moist areas, perhaps closer to snow-lie, look out for the dramatic *Solorina crocea* (with a vivid orange underside). These tundra habitats reach full expression in the Cairngorm lichen-heaths. The Cairngorm plateau is a classic tundra-type habitat: vascular plant cover is restricted, and across the gravelly surface are pockets of poorly developed soils and a rich complement of tundra lichen species. Lichen species with their British headquarters in the Cairngorms include *Alectoria ochroleuca*, *Cetrariella delisei* and *Flavocetraria nivalis*; if you want to see a good cover of these lichens elsewhere, hop on a plane to Norway!

If the Cairngorms are an important outlying example of European tundra, then there's another side to the Scottish mountains, recently discovered and still poorly known. The much wetter western mountains support a highly unusual lichen flora, which, according to the montane lichen specialist Alan Fryday, is possibly unique in the world. Highly disjunct species (e.g. in the genus *Herteliana*) indicate that the closest comparable lichen communities may occur in globally-rare hyper-oceanic environments, e.g. along the north-western pacific coast of America, on the Azores and on isolated islands in the southern Ocean. It's too early to write confidently on the nature of these western lichen communities, either in terms of biogeography, ecology or species richness. At the moment they testify to the fact that Europe still holds its secrets, that it isn't necessary to travel to the tropics to make major breakthroughs in the science of biodiversity, and that major exploratory work remains to be done in Scotland before we can confidently know and protect our biological heritage.

Boreal Forest

It's unfortunate that most people seem to think lichens are relatively passive members of the vegetation, not playing much of a role in an ecosystem. Any such misconceptions would be firmly drubbed by a flight over the northern Boreal forest. As the spruce trees become more widely-spaced, the ground between the trees takes on an unusual yellow colour (reminiscent of usnic acid?). In the northern Boreal and Taiga zones, where trees are scattered, the pale yellow covers entire biomes: yellow across vast swaths of the Earth's continents. The yellow is lichen; especially the so-called 'mat-forming' lichens in the genus *Cladonia* (i.e. *Cladonia stellaris*). The mat-forming *Cladonia* species form relatively tall and branched structures (British examples include *C. arbuscula*, *C. ciliaris*, *C. furcata*, *C. potentosa* and *C. rangiformis*). These structures are divided into two functional parts, an upper part (with algae), that is physiologically active, and a lower structural part (without algae), that is physiologically inactive and called the 'necromass'.

These lichens are not only effective at capturing essential nutrients (e.g. nitrogen and phosphorus) from rainfall, but they recycle these nutrients out of their necromass and into the upper, growing and physiologically active tissue. Far from being passive elements in the boreal forest, the tremendous ecological success of mat-forming lichens is explained by effective capture and retention of nutrients, the protection of these nutrients, and the formation of a dense structurally intact and undecomposing litter (the necromass, often up to 10 cm thick), which prevents the growth of vascular plants. These mat-forming lichens dominate the ground flora and their production drives the boreal ecosystem, providing essential winter forage for vast herds of caribou and reindeer.

In Scotland we can experience these boreal mat-forming communities only in small doses, though with a distinctly Scottish flavour. There are good *Cladonia* mats amongst trees beyond the dunes at Tentsmuir Forest in Fife. There are often more scattered mats across many of the less intensively managed heaths and blanket mires, though especially in the drier mire facies towards the north-east of Scotland. There are exciting lichen dominated vegetation types on wooded screes in the uplands, especially towards the upward extent of the north eastern pinewoods in Strathspey and Deeside. Exciting, because to come across one of these gladed screes on a walk, with stunted pines, birches, juniper, boreal epiphytic lichens (e.g. *Cetraria sepincola*, *Melanelia septentrionalis*, *Usnea hirta*, *Vulpicida pinastri*) and *Cladonia*-mats, prompts one to stare with a sense of time and place at a manifestation of the Quaternary. It is a Boreal scene, reminiscent of the recurring ice ages. However, perhaps the closest example of lichen-rich forest occurs at Culbin Sands in north eastern Scotland. These lichen mats have been explored by leading lichenologist Brian Coppins, and, unlike the mats dominated by relatively few species in the boreal forest, the Culbin Mats are special in being tremendously rich (occasionally more than 30 species per square metre). The Culbin Forest is a unique example of a Scottish lichen-rich woodland and presents the type of conundrum so common in British conservation: the pines were planted on the dunes, so what caused such a rich and uniquely important community to develop in a human-managed plantation of relatively short-lived duration? Was it some precondition of the site; was it dependent upon environmental circumstances occurring following the planting; has such a community ever had an analogue in Scotland?

Temperate Rain Forest

In Scotland one can see a staggering range of lichens in a single day's excursion

Let's move south along this global transect, out of the tundra and the Boreal forest, to where the growth of vascular plants is more vigorous, a vegetation rich in tall, woody and competitive species. The diminutive lichens are still here, richer and more numerous than ever, having adopted a special strategy of 'if you can't

beat them, join them'. Mature woodlands are composed of successful competitors (e.g. trees), and on these mature trees the lichens hitch a ride as epiphytes. Lichens are successful in woodlands through association with the trees that compose the very woodlands themselves. The lichen epiphyte flora is a complex amalgam of factors; it changes between tree species (related to differences in bark texture, chemistry, etc.) and is different between trees of the same species but of different age. The flora is also different depending upon climatic conditions, which are of course so varied in Scotland that one can see a staggering range of lichens in a single day's excursion. The Pine woods of drier and more continental north-eastern Scotland have elements of a Boreal flora, the Oakwoods of western Scotland have a temperate rainforest flora that is of exceptional international importance. It is in the western Scottish Oakwoods that the *Lobarion*-community reaches its full expression in Europe. To see comparable richness one must travel to places such as the Pacific coast of North America, or the temperate rainforests of New Zealand. The *Lobarion*-community is named after its typical component species, *Lobaria pulmonaria*. It is a community characterised by relatively large foliose epiphytic lichens, including species in the genera *Degelia*, *Parmeliella*, *Pseudocyphellaria* and *Sticta*. In sub-optimal climatic conditions it is associated with old-growth woodland, and is thought to have once been widespread in European forests. As Europe was deforested the community became more and more restricted to woodlands in an oceanic climatic setting, where the component species reproduce and establish themselves more readily, and are not therefore dependent on old-growth conditions. Where these two factors are coincidental – oceanic climate and old-growth forest – the result is a stupendous epiphyte community, a rainforest of gnarled trees dripping with epiphytes. Scotland's west coast is a haven for such places, and the richness and importance of its rainforest epiphytes is unsurpassed in Europe.

The epiphytes don't just look tremendous, they're functionally important. The epiphytes may seem relatively small to us, but pretend for a moment you're a woodland spider. The growth of epiphytes on a tree vastly increases the surface area of the trunk, and the number of 'micro-habitats' available. Instead of something approaching a tall cylinder, with uniform gradients in environment around its circumference, the tree covered with lichens becomes a vastly more complex mosaic of gradients in available living space, temperature, moisture, organic matter, physical chemistry, light... These extra resources can be partitioned into many more niches, and there is a strong correlation between the cover of lichens on a tree and the richness of invertebrates, with impacts across the food web, e.g. on passerine birds.

Lichens can fix nitrogen directly from the atmosphere.....a critical advantage over non-nitrogen fixing species.

In the high rainfall environment of western Scotland, habitats are often strongly leached of nutrients, and these 'oligotrophic' conditions are especially low in available nitrogen. It's a paradox of nature that nitrogen comprises about 78 % of the air, but that plant productivity in many habitats is strongly nitrogen limited. The nitrogen in air is only available to a special group of organisms that have adapted a chemical process to 'fix' it from the air, making it available for biological growth (e.g. think of the bacteria in the nodules of a legume root). Certain cyanobacteria (formerly called blue-green algae) can fix nitrogen from the atmosphere. Certain fungi form a lichen thallus not with green algae, but with photosynthetic cyanobacteria, while some lichen fungi form an association with both green algae and cyanobacteria. As epiphytes, these cyanobacterial lichens are well represented in the leached temperate rainforests of western Scotland. The lichens can both sequester nitrogen from the rainfall and stemflow, and can fix nitrogen directly from the atmosphere. This gives them a critical advantage over non-nitrogen fixing species, whose growth may be nutrient limited. In these environments the cyanobacterial lichens are an important source of nitrogen into the oligotrophic ecosystem, fixing nitrogen as living epiphytes, decomposing and releasing nutrients into the woodland soil.

Clean Air

It should by now be apparent that the lichens are a key part of the woodland ecosystem in both structure and function. Unfortunately, many people commonly believe trees in their natural state are the denuded 'clean-barked' specimens that sadly surround us in our cities, and which also occur down-wind from the industrial centres of Britain. These poor unclothed trees surely long for a natural and healthy covering of lichens, yet a slanderous rumour persists, and when the lichens show up they're often accused of somehow damaging the trees themselves, or reducing their aesthetic value. This is the most disreputable nonsense. Lichens have achieved modest fame amongst the naturalists as an indicator for pollution, and their presence should be encouraged for the sake of biodiversity, and as an indicator of environmental improvement, and better times ahead. It is the close physiological association between the lichen thallus and the environment (i.e. the uptake of water and nutrients from the atmosphere) that renders the lichen sensitive to atmospheric pollution. Different lichens have contrasting sensitivities to various pollutants, and, if their individual thresholds of tolerance are known, the lichen community can be used as a proxy-index for the amount and type of pollutant.

The early application of lichens as pollution indicators was used to monitor SO₂ pollution (acid rain); acid rain is now less of an issue, and lichens are being developed as indicators for the present-day problem of nitrogen pollution (hypertrophication).

This pollution sensitivity is also one of the primary reasons the lichen flora of Scotland is of international importance. Much of Scotland has escaped the ravages of the industrial revolution, and many of the epiphyte communities in 'clean-air' regions of Scotland are a full expression of the lichen community. In this sense, Scottish habitats are an extremely rare and valuable benchmark for the natural ecological condition of an epiphyte community – a very rare thing in Europe. British lichenology has tended to focus strongly on the use of lichens as pollution indicators, and this has been a useful exercise. However, with a modern focus on biodiversity conservation a greater appreciation is emerging of Scotland's lichens, their biodiversity and the insights they offer into the science of ecology. Never before have lichens had so much to offer, and research at the Royal Botanic Garden Edinburgh is combining a strong taxonomic tradition with ecological research to catalogue Scottish biodiversity and find answers to some of conservation's most pressing questions: what are the fundamental processes controlling lichen diversity? How will lichens respond to climate change? How can conservation strategy adapt to and mitigate major threats?

Ecological Continuity

The importance of Scotland's old-growth habitats cannot be underestimated.

Not long after I started working at the Royal Botanic Garden Edinburgh, I accompanied the Senior Lichenologist Brian Coppins on a trip to Tromsø in northern Norway. Brian had been invited by the Nordic Lichen Society, and for me this was something of a baptism of fire. I'd been studying lichens intensively for only four months, and hadn't developed the skills to appreciate the tundra and montane vegetation we were taken to see. However, I had developed a precocious knowledge of epiphytes on Aspen *Populus tremula*, quite disproportionate to my knowledge of lichens in other habitats. On the final day of the excursion we were taken to a forest, and to my delight there were some stands of Aspen. I immediately noticed that the epiphyte diversity wasn't particularly high on the surrounding birches, and as I approached the Aspen was surprised to see a poor covering of lichens. There were a few species I hadn't seen before, but generally the epiphyte flora was poor compared to the amazing Aspen woods Brian had taken me to see in Strathspey (e.g. with *Bacidia incompta*, *Fuscopannaria ignobilis*, *Leptogium saturninum*, et al.). Some new connection was made in my brain, and for the first time I looked at the world with an acquired lichenological critique. This was Norway, wild, covered in mile after mile of Boreal forest. Yes. But most of the forest we saw was relatively recent secondary growth, and the lichens indicated to me that it was so. The regenerated Norwegian forests looked great, and will eventually develop a rich lichen flora – eventually. I had learnt the important lesson that not all forests are equal. In

Scotland we have an expanse of moor, many pastures, and we don't do too badly for forests, but we don't have a great many. However, the important point is the extent to which the forests we have are old-growth forest – and in this facet Scotland competes well even with Norway, and is certainly the most important region within the British Isles.

A great many lichens are either very specialised, adapted to micro-habitats uniquely associated with old-growth forest, or they just don't get around very fast, i.e. they may need 100s of years to migrate between forest habitats and establish new populations. These species are restricted to and indicate the presence of old-growth conditions – they need ecological continuity to survive, or they will become extinct. While it is important to create new forest habitat, it's also important to have the old-growth resource in which these species can survive until suitable habitat is recreated, and from which they can then recolonise. While we can never be complacent about these important old-growth sites, Scotland does have some of the best representative examples. Perhaps not surprisingly therefore, the use of lichen indices for ecological continuity has been developed to a high point by Scottish lichenologists Brian and Sandy Coppins, building on the seminal work in southern England by Francis Rose.

The importance of Scotland's old-growth habitats cannot be underestimated. For example, certain lichen species are characteristic of old, dead pines (e.g. *Hypocenomyce anthracophila*, *Cladonia sulphurina*). An old pine may be 400-500 yr old, while preliminary evidence suggests a pine snag, in a dry climate, may survive intact (as an old pine 'bone') for another 500 yr. That suggests it takes 1000 yr from pine regeneration to the development of an old dead pine habitat. Once lost, such habitats cannot be quickly recreated. The millennial-scale development of old-growth woodlands, set against our puny human timescales (e.g. 3 yr research grants, elections every 4-5 yr, 10 yr monitoring plots), sets a fundamental precedent – we need to begin thinking now about the future sustainability of these habitats, and we need long-term mechanisms to ensure their survival.

Scotland's Habitat Diversity

This article has focused on Scotland's lichens and has been biased towards favourite habitats, the mountains and the forests. There are many more lichen habitats, a bewildering number, and I encourage you to explore their potential. Lichens can be dipped into or can become an obsession. For those beginning, I suggest you focus initially on the macro-lichens, the foliose and fruticose species. Armed with a note-book, a copy of Dobson's '*Lichens, an illustrated guide to British and Irish species*', a hand-lens and some simple chemistry one can easily start to incorporate lichens into monitoring, biodiversity explorations, ecological studies... In particular, the lichen flora of our cities is changing rapidly, as the air gets cleaner. It seems as if

Don't worry if you can't identify everything to species, because a great many interesting and worthwhile observations can be made using the easily identifiable species and grouping others into genera or even 'functional types' (i.e. 'white crust with isidia', 'green crust with soredia' etc).

And apart from the mountains and forests discussed here (the tip of the ice-berg!), don't forget the rocky coastline, the rivers, the mine-spoil, the sand-dunes, the heaths, the shingle, the grazed cliff-tops, the stone walls, the grave-yards....

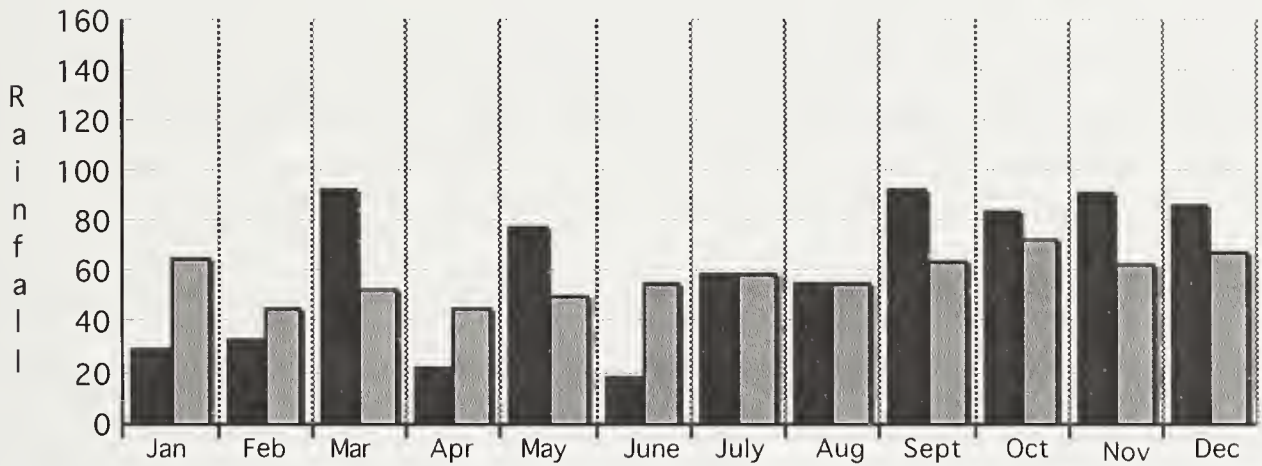
Scottish habitats are an extremely rare and valuable benchmark for the natural ecological condition of an epiphyte community – a very rare thing in Europe.

RAINFALL IN CORSTORPHINE 2006

Munro Dunn

COMPARISON OF RAINFALL IN 2006 WITH AVERAGE FOR 1971 - 2000 (millimetres)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
2006	30	32	92	22	78	19	59	55	92	84	91	86	740
1971 - 2000	65	45	53	45	50	55	59	55	64	72	63	68	694



As in 2005, the rainfall in Corstorphine in 2006, at 740mm, was somewhat above the long-term average. Most months in the second half of 2005 had been drier than average, and this continued in the first half of 2006 with most months dry or very dry. However, after average rainfall in July and August, the remainder of the year was fairly wet. The number of days with significant rainfall was 10% above average.

The year's longest dry spell was 13th - 27th July. Very little rain fell in the three weeks 21st January - 10th February, between 28th May and 9th June, and between 17th and 28th December. On the other hand, the wettest spells occurred in late March, mid-May, and mid-November.

It was, however, a year lacking in extremes of rainfall. (The highest 24-hour fall was 27mm on 25th October, and even the very dry 2003 had wetter days.) The same could hardly be said of temperature and wind, the former well above average over the year, and very high winds being frequent in the last quarter.

NO! by Thomas Hood (1844)

No sun - no moon!
No morn - no noon
No dawn - no dusk
No proper time of day
No warmth - no cheerfulness
No healthful ease
No comfortable feel in any member.
No shade - no shine
No butterflies - No bees
No fruits - no flowers
No leaves - No birds!
No..... vember

Not this year! On 1st December, the Met. Office announced that autumn had been the warmest in Britain since 1731. In parts of the country Horse Chestnut and Apple were still flowering; hundreds of Butterflies and Dragonflies were still about; and the grass was still needing to be cut!



THIS IS NOT WHAT WE'RE USED TO ON NATS OUTINGS !

How many wet Nats outings did we have in 2006 ? Not very many really:
Lesley Fairweather's (inappropriate name there!) outing to Pencaitland; Jean Murray's visit to Dawyck on 27th May; Heather's Fern outing at Penicuik. We can only think of these three. Not bad, out of 40 outings!
We had some glorious days too - Lake of Menteith; Holy Isle; Hell's Cleugh

AN URBAN RAMBLE

Charles Rawcliffe

We were delighted to receive this contribution from Charles Rawcliffe just at the end of the year. He had been in hospital for some time, but is now home and doing well.


Between 2004 and 2006 Charles took a regular walk from Crewe Road North to West Pilton Christian Centre. He kept his eyes open, and during that period noted just short of 100 different plants and animals - which just shows what an observant naturalist can do. Many of the 'beasties' were found under urban debris - damp polystyrene, plastic and paper. It's all home for someone !

Early in 2004 I began to visit West Pilton Christian Centre in West Pilton Park once a week. My route was from the first bus stop in Crewe Road North (west side) to Crewe Road Gardens, then the path alongside Granton Baptist Church, which goes by a small stretch of fenced, densely overgrown waste ground, to the Council Building Depot. I crossed the concrete bridge over Granton Access Road and came to West Pilton Place, then through a small open space with grass and trees, to Ferry Road Drive, where I turned right and then first left into West Pilton Park and the Centre.

2004

By the end of the year I had made the journey 22 times, between 19th March and 4th December, and recorded a total of 51 species, as follows:

FLORA		FAUNA	
Vascular Plants	28	Birds	13
Mosses	1	Insects	3
Fungi	1	Other Arthropods	2
		Molluscs	3



Plants: Bittersweet, Bramble, Broad-leaved Willowherb, Chickweed, Coltsfoot, Common Nettle, Creeping Buttercup, Creeping Thistle, Curled Dock, Dandelion, Dog Rose, Feverfew, Groundsel, Hogweed, Michaelmas Daisy, Red Clover, Ribwort Plantain, Smooth Sowthistle, White Clover, Yarrow.
Grasses - False Oat, Wall Barley
Trees - Elder, Hawthorn, Lime, Sycamore, Whitebeam
Mosses: *Bryum bicolor*
Fungi: Tar Spot *Rhytisma acerinum*
Birds: Blackbird, Black-headed Gull, Carrion Crow, Dunnock, Greenfinch, Herring Gull, House Sparrow, Lesser Black-backed Gull, Magpie, Robin, feral Rock Dove, Starling, Wood Pigeon.
Insects: Bumblebee *Bombus pascuorum*, Wasp *Vespula vulgaris* Peacock Butterfly *Inachis io*.
Other Arthropods: Woodlouse *Porcellio scaber*, Cross or Garden Spider *Araneus diadematus*.
Molluscs: Snails *Cepaea hortensis*, *Cepaea nemoralis*, Slug *Arion distinctus*.

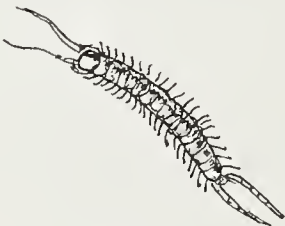
Of the 13 bird species, feral Rock Dove, Carrion Crow, Magpie, Blackbird, Dunnock and Sparrow were present all year.) Herring Gulls were around in the winter; and Lesser Black-backs replaced them in the summer. (They breed on the flat roofs, and are a real nuisance. Starlings and Wood Pigeons were breeding. Common and Black-headed Gulls are nearby in winter, but Blackheads were seen only once. Robins were only seen in winter, and the Greenfinch was a rarity.

ARTHROPODS are creatures with jointed legs and bodies, and hard external shells or skeletons.

2005

The journey was made 32 times between 11th January and 19th December, and 39 new species were recorded:

FLORA		FAUNA	
Vascular Plants	11	Mammals	1
Mosses	16	Birds	5
Fungi	1	Insects	3
Lichens	4	Other Arthropods	4
		Molluscs	4



- Plants: Cat’s-ear, Common Storksbill, Daisy, Field Rose, Garlic Mustard, Knotgrass, Nipplewort, Oxford Ragwort, Welsh Poppy.
Grasses - Cock’s Foot and Yorkshire Fog
- Mosses: *Brachythecium rutabulum*, *Bryum argentium*, *B. capillare*, *Ceratodon purpureus*, *Grimmia pulvinata*, *Hypnum cupressiforme*.
- Fungi: Fairy Ring *Marasmius oreades*.
- Lichens: *Phaeophyscia orbicularis*, *Physcia* sp., *Xanthoria parietina*, *Xanthoria ucrainica* (a split from *X. candelaria*).
- Mammals: House Mouse (in the Centre)
- Birds: Common Gull, Collared Dove, Swift, Pied Wagtail, Blue Tit,
- Insects: Bedeguar Gall or Robin’s Pincushion caused by the Gall Wasp *Diplolepis rosae*; Bramble Leaf Blotch from the Saw Fly *Metallus pumilus*; Large White Butterfly *Pieris brassicae*
- Other Arthropods: Woodlice *Oniscus asellus*, *Philoscia muscorum*, Centipede *Lithobius forficatus*, Millipede *Blaniulus guttulatus*
- Molluscs: Tower Snail *Cochlicopa lubrica*, Snails *Discus rotundatus*, *Trichia striolata*, Slug *Deroceras reticulatum*

Black-headed Gulls were still elusive, but I was able to add Common Gull, seen regularly outside the breeding season. Dunnock and Blackbird both disappeared in the autumn, while a Greenfinch came in spring, called ‘dwee’ and departed. A Robin, seen from 4th October onwards, may have been a winter migrant, Swift and Pied Wagtail must have been on passage. Starling was recorded 18 times, some breeding, but the 90+ seen on 11th October must have been migrants. A Magpie's nest found on 14th November was new, and suggests that a pair had bred there.

2006

INSECTS are the ones with 6 legs.

The journey was made 13 times between 17th January and 29th June, after which recording ceased, as I was not able to walk the distance. Nevertheless 9 new species were recorded:

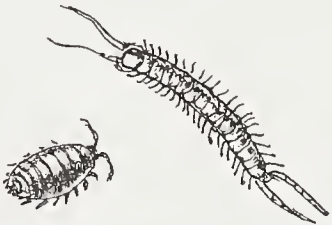
FLORA		FAUNA	
Vascular Plants	5	Insects	2
Fungi	2		

- Plants: Canadian Fleabane, Hedge Mustard, Shepherd’s Purse, Spear Thistle and the shrub Weigelia
- Fungi: Powdery Mildews *Erysiphe cichoracearum*, *Sphaerotheca erigerontis-canadensis*
- Insects: Bumblebee *Bombus lucorum*, Ground Beetle *Amara ovata*

The Weigelia shrub was in the fenced-off, densely-covered waste ground, and was not noticed previously, but this year its purple blossom stood out. The Mildew *Erysiphe cichoracearum* grows on Michaelmas Daisies, while *Sphaerotheca erigerontis-canadensis* grows only on Fleabane *Conyza* (formerly *Erigeron*) *canadensis*, which was identified by its presence. It is a rare weed in the Lothians, and was growing at the base of the railway embankment on the south-west side.

ACKNOWLEDGEMENTS:

Plants	Ms.J.Muscott	Molluscs	Dr.AT.Sumner
Mosses	Dr.D.Chamberlain	Beetle	Mr. M. Sinclair
Fungi	Dr.B.Coppins	Other Arthropods	Dr A Barber



MYSTERY PLANT

October 2006: Although a mystery plant which ‘grew and grew’ in the garden during the summer months appeared to be like a Goosefoot *Chenopodium* sp., it did not quite fit any of the pictures. Eventually it was identified by Douglas McKean at RBGE as *Ambrosia artemisiifolia* (a Ragweed). The status of the Ambrosia has obviously changed in recent times. According to *Plantlife of Edinburgh and the Lothians* (pub. 2002) it was stated to be ‘rare’ in the Lothians, but had been recorded in 1968 and 1978.

It is now however, one of the commonest plants to be brought to RBGE for identification and, like many other oddities, its new frequency owes much to packets of bird-seed. The pollen is severely allergenic.
Eunice Smith

Introduction

The Aspen hoverfly, *Hammerschmidtia ferruginea* is a UK Biodiversity Action Plan species, which is being actively managed in its last remaining localities in Scotland. *H. ferruginea* eggs are laid under bark of decaying Aspen *Populus tremula*, upon which the larval stage depends; but adult requirements are largely unknown. I completed a study at RSPB Insh Marshes nature reserve in the spring and summer of 2006, which was designed to fill this gap in knowledge.

Why is this insect important?

H. ferruginea is an endangered species of saproxylic hoverfly: it is listed in the UK Red Data Book as a category 1 (endangered) species; it is included in the UK Biodiversity Action Plan (UKBAP) process and recent surveys confirm its endangered status (2001). *H. ferruginea* is considered an indicator of the health of Aspen woodland habitats and is also an important umbrella species for other saproxylic insects that depend on decaying Aspen. Saproxylic organisms are those that are dependent, during some stage in their lifecycle, upon the decaying wood of moribund or dead trees.

As part of the UKBAP process, strategies must be designed for the restoration, protection and monitoring of *H. ferruginea*. Investigations began into the status, ecology and population trends of *H. ferruginea* in the 1990s, carried out by the Malloch Society. Most of the research has concentrated on the requirements of the larval stages. It is important to understand adult requirements in order to effectively achieve species recovery targets, and they are missing in the programme of work that is currently underway for *H. ferruginea* in Scotland.

Distribution of *H. ferruginea*

In the northern hemisphere, *H. ferruginea* has a holarctic distribution but is rare throughout its range. Currently in the UK, populations occur at only 5 Scottish localities. It has declined from 15 localities since the 1990s. The main reason for this decline is a reduction in the amount of breeding habitat: decaying Aspen. Some Aspen stands are too small to support *H. ferruginea*, and others lack appropriate age and structure including saplings, mature trees and dead timber. *H. ferruginea* requires fallen Aspen trees and branches of at least 15cms diameter (for sufficient decay to build up) in which to breed, and flowering plants as a nectar source for the adults.

Current management

Management strategies to boost and maintain populations are being tested, such as creating artificial breeding sites by cutting down suitable trees. However, this has not proven to be totally successful as wet decay under the bark dried out too soon. In natural circumstances, a fallen Aspen tree can take up to 2 years to build up suitable decay and this condition remains favourable for 2 years. In trees that were cut down, decay lasted up to 17 months. At this rate, cutting trees is unsustainable for most Aspen stands. Extending the time that wet decay persists is an option currently being investigated by cutting sections from live, windblown trees over succeeding years, in an attempt to extend the time any one tree remains in suitable condition.

A mark and re-capture study

In theory, it is possible to estimate insect population size, longevity and dispersal ability using mark recapture methods, and some studies have achieved meaningful results. However for Diptera, application of these techniques are uncommon and where attempted, they have had limited success primarily because adults have been too elusive. My attempt fortuitously proved successful. It involved systematic, daily searches of the local habitat, flowering vegetation and fallen Aspen. The time spent searching for marked individuals at fallen Aspen was advantageous as it afforded an important insight into *H. ferruginea* mate seeking behaviour.

See the photo of the marked female *H. ferruginea* (yellow paint mark can be seen on thorax).

Findings

Using emergence traps and mark-recapture techniques (marking consisted of applying small dots of enamel paint onto the thorax of 400+ individual insects) adults were shown to be on the wing from the 17th May until 15th July, longer than previously thought. Marked individual males were found living up to 32 days, and marked females up to 51 days, which is almost equivalent to the whole flight period of 60 days (the average longevity of an adult hoverfly is 21 days).

At fallen Aspen, males were found defending territories on the log that may be acting as leks, attracting females. Emergence results showed sex ratios were even, but males emerged first, possibly in order to set up such territories. The size of territory an individual male would defend was found to increase when fewer males were present; however it was generally found to be roughly 140cm in length. Marked males were observed returning to loyally defend the same area, and marked females returned repeatedly to oviposit on the same fallen Aspen over the flight period.

The extended longevity may be explained by this behaviour, where it may be advantageous for females to visit many potential sites over time, to lay eggs.

This new information illustrates the importance of fallen Aspen as not only an egg-laying site, but also a mate seeking site. It may also be necessary for a fallen Aspen tree to be large and whole to occupy many defending males forming a functioning lek. Current management of cutting up fallen trees may hinder *H. ferruginea* breeding success.

Adult food plants were found to be sequentially flowering Bird Cherry *Prunus padus*, Rowan *Sorbus aucuparia*, and Hawthorn *Crataegus monogyna*. Individuals were observed at fallen Aspen, with pollen attached to small hairs around the thorax after the last known food plant (Hawthorn) had passed; the food plant at the end of the flight period remains unknown but is likely to be another member of the Rose family.

ACKNOWLEDGMENTS

I would like to thank Carl Mitchell and Pete Moore at RSPB Insh Marshes Nature Reserve, without whom this project would not have been possible. I would like to thank Iain MacGowan (SNH) and Dr Graham Rotheray (National Museums of Scotland and my father) for their expert advice and knowledge which was crucial for the planning and execution of this study. Thanks also to Dr Graham Holloway, the director of my MSc course, for his support and supervision.

Ellen L Rotheray

Adults dispersed up to 1km to reach food plants and breeding sites, often over open areas of land which were previously thought to act as geographical barriers. As individuals seem to have the ability to survive for up to 51 days and may be visiting many localities, their abilities of dispersal may also be underestimated.

Prospect

Findings from this study, for example adult food plants, the need for large fallen Aspen and the known dispersal abilities, will assist in devising a conservation plan due in 2007, where it is intended to include practical advice on management, with prescriptions for using artificial breeding sites. In terms of future study and monitoring, this project has produced as many questions as answers but it has shown that simple techniques of using emergence traps over breeding sites and mark/re-capture techniques provide an effective methodology for investigating populations of this endangered hoverfly.

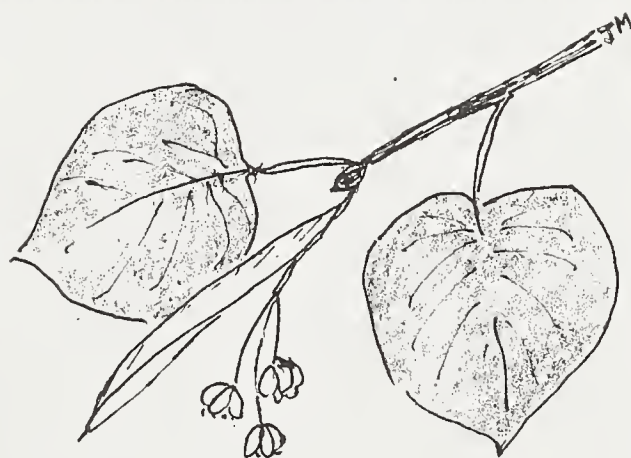
LIME TREES

The commonest Lime tree in the Lothians, the Common Lime *Tilia x europaea*, is a hybrid between the two native species: Large-leaved Lime *Tilia platyphyllos* and the Small-leaved Lime *Tilia cordata*. It often has a thick skirt of suckers at its base, and its leaves are hairless apart from in the junction of the veins on the back.

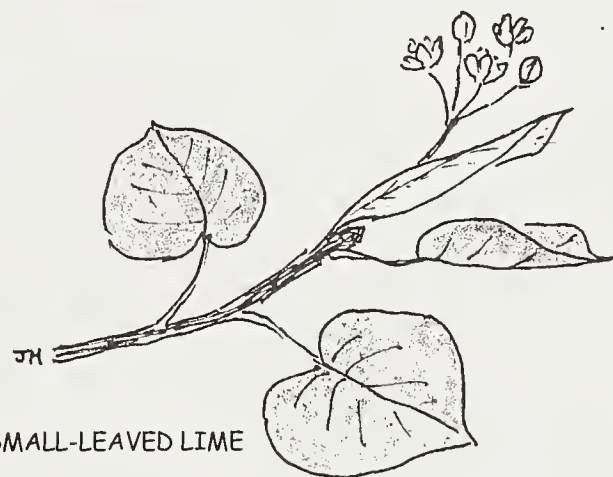
The Large-leaved Lime, which is also around in the Lothians, is recognisable by its slightly larger leaves which are hairy all over.

The Small-leaved Lime is much rarer, and more difficult to distinguish from the hybrid, except when in flower, for, unlike the other two Limes, whose flowers hang down, the flowers of *Tilia cordata* stick up - and the Fungus Group had a beautiful demonstration of this when they visited the Drum Estate on July 2nd.

Jackie Muscott



COMMON LIME



SMALL-LEAVED LIME

In September we visited the Penicuik Estate which has a good selection of Horsetails. Horsetails tend not to be very popular because the commonest one, the Field Horsetail *Equisetum arvense*, is a persistent weed. However there are eight species of Horsetail in Britain, all found around Edinburgh, and most are more selective in where they grow. There are two evergreen species and the smallest is the Variegated Horsetail *E. variegatum* which can be found on the north-east side of the path at Aberlady, before the Marl Loch. Its name is derived from the black sheaths around each node, and the narrow black teeth above the sheath have very wide white margins. The other evergreen Horsetail, the Dutch Rush *E. hyemale*, grows in Roslin Glen below the chapel near the river. Its hollow stems can be found in the Hawthorn bushes shortly before going into the wood, heading downstream. This Horsetail is unusual because unlike all the other British Horsetails it does not have any sheath teeth. The unexpanded shoot has them to begin with, but the teeth attached to each sheath stick together and are detached from the sheath by the new section pushing up from below. The sheath teeth pile up on top of the shoots and look like lots of little hats nested inside one another. Continuing along the path into the wood the most spectacular of all the Horsetails can be seen in a very wet south-facing area. The Great Horsetail *E. telmateia* can grow up to two metres high. It has pure white stems and dense whorls of branches. Even when it dies down in winter the dried stems can still be seen.

On the Penicuik Estate are the remaining five species, which are more similar to one another and all die down in the winter. There are small patches of the Field Horsetail *Equisetum arvense*, which tends to thrive in disturbed areas so it is found along the riverbank and in ditches. It has very angular side branches with a four-pointed star-shaped cross-section. There are black sheath teeth on the main stem and the branches also have teeth. These are comparatively long, green and spreading. If the shoot is held up to the light the bristly branch teeth are usually conspicuous. In marked contrast, the Wood Horsetail *E. sylvaticum* has very thin delicate branches which branch again. The branches have a four-angled section and spreading branch teeth, but any possible confusion with the Field Horsetail is removed on looking at the large sheath teeth which are long, brown, and stick together in twos and threes.

Another species is found on the east side of a bridge downriver of the Low Pond, and this is the Shade Horsetail *E. pratense*. It looks superficially similar to the Wood Horsetail, with delicate branches forming a green haze, but unlike the Wood Horsetail the branches are three-angled and not branched. The sheath teeth are very different, being small and black. Both species grow intermixed, giving a good opportunity to compare them.

There is a wet area, like an overgrown pond, on the north side of the path before the Low Pond. This has a population of the Water Horsetail *Equisetum fluviatile*. Water Horsetail has thin-walled, hollow stems and many small, black, sheath teeth. In the shade or in a very dense stand it has branches, often irregular in number. It grows in standing water and into the vegetation at the edge of ponds. The only remaining species that also grows in wet places is the Marsh Horsetail *E. palustre*. This can be found in the wet area north east of the walled garden, beyond the Low Pond. The Marsh Horsetail does not grow in open water and has solid stems with air channels, making a very different main stem cross-section when compared to the Water Horsetail. It usually has side branches which are less numerous than most of the other branched species. The main stem has only a few wide, black sheath teeth with a narrow white margin, and the branch teeth are short and black.

Horsetails can vary and it is worth looking at plants growing in different situations to become familiar with the range of variation which occurs. The Field Horsetail in particular is found prostrate in car parks, growing lushly on field margins, with branched branches in shady hedges, or almost no branches in mountain flushes. The species can best be distinguished by being familiar with the characteristics of the main stem sheath teeth, the branches and branch teeth. There are more features that can be useful if determination is difficult, and these are well described in *The Fern Guide* by Merryweather and Hill in the AIDGAP series, published by the Field Studies Council.

DUTCH RUSH OR ROUGH HORSETAIL

Equisetum hyemale, which we saw at Ayr Gorge, and grows in Roslin Glen, was used as a pot scourer and for cleaning flutes!



USING SHADE TOLERANT PLANTS TO IDENTIFY BROAD-LEAVED LOWLAND ANCIENT WOODLAND IN MIDLOTHIAN

Neville Crowther

Introduction

Broad-leaved woodland is the climax vegetation of most of lowland Britain. Since neolithic times it has been diminishing in area. By 1920 it had declined to about 4% of the land area. As a repository for communities of rare plants and animals this ancient woodland is arguably the most valuable rare habitat that we possess. Because of the paucity of historical records there is a need for another means of distinguishing between secondary woods and plantations, and the long-lived semi-natural woods. Botanists have long tried to use indicator species to identify these old woodlands. This paper develops a method suggested elsewhere, which may have some value in lowland Scotland. It uses suites of indicator species verified by cross reference to known ancient woodland sites.

Historical sources

England has been better served than Scotland in respect of historical records. For instance the Domesday book of 1087 provided much secondary evidence of woodland. From 1600 onwards, cartographers produced excellent maps for some areas. The NCC *Inventory of Ancient Woodlands*¹ is a good starting point for Scottish interpretation. It utilizes two key mapping dates to identify 'ancient wood' and 'long-established semi-natural woodland'. These are General William Roy's military maps of 1747 - 1755 and the first 6-inch OS maps of 1852-54.

Botanical sources

Two recent articles in *British Wildlife* have considered the value of indicator species as a substitute for, or as an aid to, this historical record. The late Francis Rose² selected shade tolerant plants from lowland ancient woodland in southern England which were thought to be good indicators of antiquity. George Peterken³ compared shade-tolerant vascular plants from known ancient woodlands in Lincolnshire with those same species occurring in known secondary woods. He was able to express as a percentage for each species, their reliability as an indicator. For example, because plants such as Cow-wheat were only recorded in sites which were known ancient woodlands, their reliability as an indicator is shown as 100%. This is unlikely to be true in Scotland, where Cow-wheat is a moorland plant; however both authors sounded a cautionary note regarding the use of this tool for identifying these old woods. Peterken particularly considers this question of reliability. He concludes that suites of species, rather than individuals should be used. Even so, caution must be used in reaching conclusions about longevity.

Lowland Scotland

In Table 1, I have selected those species listed by both authors, and which are known to have been recorded in woodlands in the Lothians, as ones which could potentially be used as indicators. There are 71 vascular plants in the list. I have indicated which of these species are to be found in 15 selected woodlands, surveyed in Midlothian during the last 20 years by myself and colleagues from SWT, with the purpose of assessing those woods as Wildlife Sites⁴. All the sites are listed in the NCC Inventory, and the areas of ancient and/or long-established woodland have been estimated. This comparison will give an indication of what number of species to use as a threshold number when concluding which are 'good' woodlands. It would seem obvious that the area of a site will influence the threshold number. However there is little evidence from the Midlothian records that the site size, at least down to 5 hectares, affects the number of indicator species.

In order to establish a means of identifying Ancient Woodland (prior to 1750) and Long-established Woodland (prior to 1850), about which historical information is absent, I have shown the number of indicator species and the area in hectares of these 15 sites (See Table 2). From this table it can be seen that the nine 'Ancient Woodlands' show the highest number of indicator species (between 35 and 50), whereas the ones which are wholly or partly 'Long-established Woodlands' have a lower number of species (22 to 33). This suggests that an estimate of the threshold between 'Ancient' and 'Long-established' woodland lies between 25 and 30 species.

It is acknowledged that the method is far from perfect, but it may be the best tool we have, and may with caution, be useful to conservation bodies. Not only will it allow old woodland to be identified in the absence of historical records, but it will also enable the degree of deterioration or conversely the level of preservation to be assessed. Also, regardless of a woodland's history, the list will allow the ranking of sites, in order to merit conservation effort.

The first draft of this paper was submitted in December 2000 to Iain Laidlaw of the Forestry Commission, Lothian and Borders Conservancy and to Peter Quelch, then the F.C. Native Woodland Advisor. The latter responded positively to this proposal as a tool for assessing ancientness which might provide a model for different geographic areas when modified in a similar way to reflect local trends. In view of the renewed interest in this topic, I offer a slightly updated version of the original. NC

TABLE 1 (y = yes this species is on Francis Rose list)

Vascular plant species	F. Rose	Peterken %.	Midlothian Woodland presence															Common Name
<i>Adoxa moschatellina</i>	Y	55			3	4		6	7	8					13	14		Townhall Clock
<i>Allium ursinum</i>	Y	68	1	2	3	4	5	6	7	8	9		11	12	13	14	15	Ramsons
<i>Anemone nemorosa</i>	Y	85	1	2	3	4	5	6	7	8				12	13	14		Wood Anemone
<i>Blechnum spicant</i>	Y			2	3	4	5	6	7	8		10	11	12	13			Hard Fern
<i>Bromopsis ramosa</i>	Y		1	2	3	4		6		8	9	10	11	12	13	14	15	Hairy Brome
<i>Campanula latifolia</i>	Y	53			3					8								Giant Bellflower
<i>Cardamine amara</i>	Y		1		3		5		7						13	14	15	Large Bittercress
<i>Carex laevigata</i>	Y	100																Smooth-stlkd Sedge
<i>Carex pendula</i>	Y	100	1		3		5			8		10	11	12			15	Pendulous Sedge
<i>Carex remota</i>	Y	82		2				6	7	8			11				15	Remote sedge
<i>Carex sylvatica</i>	Y	65	1	2	3		5		7	8			11		13	14	15	Wood Sedge
<i>Chrysosplenium alternifolium</i>	Y	100		2	3			6										Alt.-lvd Golden Sax.
<i>Chrysosplenium oppositifolium</i>	Y	60	1	2	3	4	5	6	7	8	9		11	12	13		15	Opp.-lvd GoldenSax.
<i>Conopodium majus</i>	Y	70	1	2	3			6		8		10	11	12	13	14	15	Pignut
<i>Corylus avellana</i>		55	1	2	3	4	5	6	7	8	9	10	11		13	14	15	Hazel
<i>Dactylorhiza fuchsii</i>		70		2			5		7			10	11			14	15	Com.Spotted Orchid
<i>Dryopteris affinis</i>	Y							6		8								Scaly Male Fern
<i>Dryopteris carthusiana</i>	Y				3													Narrow-lvd Buckler
<i>Epipactis helleborine</i>	Y	80		2	3											14		Broad-lvd Helleborine
<i>Equisetum sylvaticum</i>	Y	100					5	6	7		9	11		13				Wood Horsetail
<i>Festuca gigantea</i>	Y			2	3					8				13			15	Giant fescue
<i>Fragaria vesca</i>		67	1		3		5		7	8	9	10	11		13	14	15	Wild Strawberry
<i>Gagea lutea</i>	Y				3													Yellow Star of Bethlm
<i>Galium odoratum</i>	Y	94		2	3	4	5	6		8	9	10	11		13	14	15	Sweet Woodruff
<i>Geum rivale</i>	Y	66	1			4	5	6	7	8		10		12	13	14	15	Water Avens
<i>Holcus mollis</i>	Y		1	2	3	4		6	7	8	9	10	11	12	13	14	15	Yorkshire Fog
<i>Hyacinthoides non-scripta</i>	Y	61	1	2	3	4	5	6	7	8		10	11	12	13		15	Bluebell
<i>Hypericum androsaemum</i>	Y	71		2	3		5											Tutsan
<i>Hypericum hirsutum</i>		69		2	3								11					Hairy St.Jn's Wort
<i>Hypericum humifusum</i>		56								8								Trailing St.Jn's Wort
<i>Hypericum pulchrum</i>	Y	56		2		4	5			8		10	11			14		Slender St.Jn'sWort
<i>Ilex aquifolium</i>	Y		1	2	3	4	5	6		8	9	10		12	13	14	15	Holly
<i>Lathraea squamaria</i>	Y	100											11		13			Toothwort
<i>Luzula pilosa</i>	Y	86								8				12				Hairy Woodrush
<i>Luzula sylvatica</i>	Y	93		2	3	4	5	6	7	8	9	10	11	12	13	14	15	Great Woodrush
<i>Lysimachia nemorum</i>	Y	91		2	3	4	5	6		8			11	12	13	14	15	Yellow Pimpernel
<i>Lysimachia nummularia</i>		69																Creeping Jenny
<i>Melampyrum pratense</i>	Y	100						6	7	8								Cow-wheat
<i>Melica uniflora</i>	Y	90		2	3		5			8								Wood Melick
<i>Mercurialis perennis</i>		54	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Dog's Mercury
<i>Milium effusum</i>	Y	91		2	3		5	6		8		10		12				Wood millet
<i>Moerhingia trinervia</i>	Y				3		5			8			11			14	15	Three-vnd Sandwort
<i>Myosotis sylvatica</i>	Y						5			8			11		13		15	Wood Forget-me-not
<i>Neottia nidus-avis</i>	Y	100														14		Birds Nest Orchid
<i>Oreopteris limbosperma</i>	Y																	Lemon-scented Fern
<i>Oxalis acetosella</i>	Y	86	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Wood Sorrel
<i>Paris quadrifolia</i>	Y	100	1															Herb Paris
<i>Phlegopteris connectilis</i>	Y						5	6										Beech Fern
<i>Phyllitis scolopendrium</i>	Y				3		5			8			11					Hart's Tongue Fern
<i>Poa nemoralis</i>	Y	75	1	2	3		5	6	7	8	9		11	12		14	15	Wood Poa
<i>Polypodium vulgare</i>	Y						5											Common Polypody
<i>Polystichum aculeatum</i>	Y			2	3			6	8							14		Hard Shield Fern
<i>Populus tremula</i>	Y	71																Aspen
<i>Potentilla sterilis</i>	Y	82	1	2	3	4	5	6		8	9	10	11	12	13	14	15	Barren Strawberry
<i>Primula vulgaris</i>	Y	75	1			4	5	6		8			11	12	13	14	15	Primrose
<i>Prunus avium</i>	Y	57	1	2	3		5	6		8	9	10	11	12	13	14	15	Gean
<i>Prunus padus</i>	Y			2	3		5			8			11	12	13	14	15	Bird Cherry
<i>Quercus petraea</i>	Y	72			3	4	5	6	7	8		10	11		13		15	Sessile oak
<i>Ranunculus auricomus</i>	Y	75			3									12		14		Goldilocks
<i>Sanicula europaea</i>	Y	56	1	2	3		5	6		8	9	10		12		14	15	Wood Sanicle
<i>Scrophularia nodosa</i>		72		2	3	4	5	6	7	8	9	10				14	15	Common Figwort
<i>Sorbus aucuparia</i>	Y		1	2	3	4	5	6		8	9	10	11	12	13	14	15	Rowan
<i>Stellaria holostea</i>		58			3		5	6	7	8	9		11	12	13	14		Greater Stitchwort
<i>Stellaria nemorum</i>		100	1	2	3					8			11				15	Wood Stitchwort
<i>Ulmus glabra</i>	Y		1	2	3	4	5	6		8	9	10	11	12	13	14	15	Elm
<i>Valeriana officinalis</i>		75	1	2		4		6	7	8			11	12			15	Valerian
<i>Veronica montana</i>		71	1	2	3	4	5	6		8	9	10	11		13	14	15	Wood Speedwell

On November 26th a small party from the Westgarth Walking Group, one of the social groups in my church, St. Cuthbert's Episcopal in Colinton, walked from Colinton to the Gallery of Modern Art in Belford Road, along the Water of Leith. Here is a description of that walk, from an article I wrote for the church magazine, but specially expanded to appeal, I hope, to the many interests of the Edinburgh Natural History Society members. My aim is to give you an idea of the immense variety of sights that can be seen by Edinburgh's own river, including Edinburgh folk.

Colinton Dell invited us into its wooded depths, with sunlight ahead bringing out the colours of what lay all around us. And so began our walk, as our cosy group of three entered the Dell from the steep downhill Colinton Kirk approach.

Oh! what a wondrous sight we saw, just after we passed the permanently muddy bit of the Dell walk below the old Balerno railway line. Right before our eyes was a Heron standing on the top of the mighty weir situated just in front of the wooden rustic bridge carrying the path over the river. Standing silent, stock still and looking upriver towards Colinton, it was both a grim and a beautiful sight. The awesome power of nature emanating from that magnificent body was remarkable. Suddenly, a bonus! The Heron rose gracefully in flight towards the topmost branches of the trees on the Merchiston Castle School side of the river bank. What a setting for the Heron to be in! - river, tumbling weir, dense woodland.

Of all the mill remains in Colinton Dell my personal star attraction is a remnant of Kate's Mill. Though very near to the path, it is invisible, being totally hidden in the woodland. So, since discovering it three years ago, I feel that it is my secret place. What one sees now is the high retaining wall holding back the bank from the drive leading from the gatehouse - now a private residence - to the mill. The curving junction of this wall with the mill wall is still so perfectly neat. And then the short length of mill wall is evident, until it curves round at the mill entrance, to disappear into the mound of earth which has been pushed down from above, into the wood. With many of its stones now covered with thick ivy, it feels as if one is discovering a lost civilisation. It reminded me of the sensation that I felt in 2005, when having ventured abroad to a remote place for the first time in my life, I walked the trail to Machu Picchu in Peru, and then through Machu Picchu itself. Seeing the mill remains again to show off to my walking companions, and give them a privileged view of my little secret, was so thrilling, and it had lost none of its original freshness of discovery. Who can imagine now what a noisy and busy place this would have been when the mills were operating!

A very interesting species populated one area of our walk. This was the rare and not often seen Homo Park Worker. We were greatly amused by a group of four of them in Roseburn Park, next to their natural habitat - a workman's portable cabin. Their social behaviour was curious. It involved listening rapturously to a football game on their radio. Have you ever wondered how they spend their day? Now all is revealed: that is what they get up to when we think that they are busy looking after our public parks and gardens. Ah, but of course, it was their tea-break! However, much as we would have liked to observe this fascinating newly-found species, we could not remain to see how skilfully they handle the transition from leisure to work behaviour.

Returning briefly to man's impact on the landscape, this walk was rich in transportation engineering features - the 8-arched Slateford Aqueduct, carrying the Union Canal, opened in 1822 and built by Hugh Baird, a contemporary of Thomas Telford; the 14-arched Slateford viaduct, opened for the Caledonian Railway in 1848, and built by John Miller; the 3-arched Murrayfield viaduct, next to Murrayfield Rugby Stadium, opened in 1842 and built for a company which later became absorbed into the North British Railway empire; and the loftiest structure of them all - the 3-arched Coltbridge viaduct opened for the Caledonian Railway in 1861, to serve the west and north of Edinburgh and Leith. Slateford Viaduct carries the tracks to Glasgow Central and the West Coast of England, whilst the viaduct near to Murrayfield Rugby Stadium carries the tracks to Glasgow Queen Street and all points north of the Central belt; though not the first railway, this was the first between the two cities.

Of the four, the most intriguing is the viaduct adjacent to Murrayfield Rugby Stadium. If any of you reading this article cares walk through the viaduct, then halt half-way and notice the complexity of its construction. A central stone arch, is flanked on each side by an arch consisting of several courses of deep orange-coloured bricks supporting the stone above. Then look at its sides and see the gracefully pedimented stone top and the varied number of the brick courses, showing their natural colours in the upper part of the arches, which are either 7-courses deep over the river, or 3-deep over the paths.

The walk showed us the pattern of land use in and around the river valley: such a variety of human endeavour, feats of achievement and everyday human activity over the centuries - mill remains (Colinton Dell); structures for transportation (Slateford, Murrayfield, Coltbridge viaducts); architecture and works of art (north-western fringe of the New Town); estates and an estate folly (Redhall House policies in Colinton & Craiglockhart Dells); a very tidy cemetery

(Chesser), vast allotments (Chesser); large riverside public parks and gardens (Saughton & Balgreen); and extensive sporting facilities for lawn bowling and rugby (Balgreen & Murrayfield). There was also for me a highly personal spot. The Chinese Consulate, where I got my visa for my visit to the Great Wall of China and Peking last year, stands where Riverside Crescent joins Corstorphine Road. Here only a river bridge separated us from it. To complete the list there was also the Balerno branch railway in Colinton Dell, which we were very near to at several points. Over the centuries the river and its valley have certainly been well used.

Having crossed Roseburn Terrace for our final section of the walk, the party was immediately confronted by one of Edinburgh's most dramatic hidden corners. Such a steep-sided spot, with the secret picturesque world of the dead-end streets of Coltbridge Avenue and Coltbridge Gardens across the river. It was a charming, sylvan scene – the river water immediately next to the concrete path, lapping it very nearly at shoe level, with the steep wooded bank of Roseburn Cliff towering above us on the right hand side of our path, and across the water, the idyllic gardens of the houses coming right down to the river bank.

Once we had descended by way of the steps from the cul-de-sac called Roseburn Cliff, into the river valley far below us, I was struck by how fast the river flowed here, its passage constricted by the gorge. It flowed very deeply over rapids at a ferocious speed. The sight of this stimulated me to think how Edinburgh will fare if the Water of Leith, River Almond and its numerous burns ever rise as a result of global warming and climatic change. My thoughts soon inspired the whole group to a discussion on this, under our other hat - *Virtuous, On the Move, Church Talking & Current Affairs Group* (known also as the *Sorting out the World Group*!).

Also in this gorge is a perfect example of how a magnificent man-made structure can enhance the natural landscape – this structure being the colossal, lengthy, sloping, sheer wall of the south abutment of Coltbridge Viaduct, and the Viaduct itself, crossing slantwise over the river.

Our destination was the Gallery of Modern Art, and in front of it the soothing piece of landscape art, called *Landform* by Charles Jencks, the American sculptor. To balance the sighting of the Heron at the beginning of the walk, the water feature of this sculpture was home to a beautiful Swan and a flock of ducks. The Swan was gorgeous, but, my word, what a nasty temper it had! One poor duck was stabbed at by the Swan, and seen off. It stood no chance against the territorial behaviour of the Swan, which once it was happy that it had seen off every other water bird, got down to its important task of upending and feeding itself.

The walk is certainly one for 'all lovers of the picturesque' to quote William McGonagall in his poem *The River of Leith*, written during the last two decades of the 19th century.

And now, to sum up the essence of this walk in my own words:

Oh! how pleasing it is to linger by you, dear river,
How timeless and enduring, your sights and
sounds,
Our feathered friends' home; creations of swiftness
and brightness,
Delighting and tantalising us, as you joyfully master
the air.



ENCOUNTERS with SWANS

The Water of Leith group expedition reminded me very much of other encounters with Swans. The first one was at Lanark Loch last year. There is an immensely large flock of Swans there. On this day my Lanarkshire friend was feeding the Swans at the lochside and one Swan, well noted by him for being a bully even against its own kind, barged in and belligerently pushed and shoved other Swans away.

Then it and other Swans ganged up against a poor wee innocent duck with its ducklings all minding their own business, chased them away and kept on doing that until the smaller sized waterfowl were some distance away.

The other meeting with Swans made me feel a bit wary of them. They can be very intimidating birds. This one was with a family of Swans – parents and about 7 adolescent cygnets - on the Union Canal at Wester Hailes round about November of last year, when they leant over with their beautiful slender necks to eat the grass beside the towpath.

Roddy Clark



FORTH ISLANDS SEABIRD COUNTS 2006

Fulmar: For some years the total number of Fulmars breeding on the islands in the Firth of Forth has been around 1,500-1,600 pairs. Then in 2004 their number dropped to 1,364 sites and in 2005 to 1,189 sites. This year there was a return to their previous numbers with a count of 1,539 apparently occupied sites. Apart from Inchmickery where numbers remained the same as last year (41 sites) all the other islands showed an increase this year, with the biggest increases being on Craigleith (up from 62 to 157 AOS), Fidra (up from 127 to 176 AOS) and Inchcolm (up from 131 to 240 AOS).

Cormorant: Last year the number of breeding Cormorants dropped by about 25% from the previous year. This year their numbers increased from 303 to 347 nests, a rise of about 14%.

Shag: This is another species where there was a big dip in breeding numbers last year – a drop of about 59%. Thankfully there was some better news this year with the numbers up by 39% to 1146 nests.

Kittiwake: Kittiwake numbers have perhaps remained steadier in recent years compared to other species, with numbers ranging between 5,400 and 5,800 nests. This year's count was down by some 11% overall. Looking at the individual islands the counts were down on some islands (Bass Rock and Craigleith by about 10%, May Isle by 16%) while on others they went up. The Lamb stands out as being different with more than twice last year's numbers – up from 94 to 202 nests.

The ringers came back from Inchkeith with some disappointing news later in the season. They had found dead fledged and unfledged chicks. During earlier visits they had noticed that the young birds were being fed their usual diet of sandeels and sprats. During this later visit, pipefish were being brought in and these are of no nutritional value to seabird chicks.

Common Tern: This year the numbers breeding dropped from 257 nests last year to 198 nests this year.

Arctic Tern: Another species where numbers dropped this year – down from 609 nests last year to 515 nests this year.

Roseate Tern: A more pleasing result for this rare species with a count of five nests this year – up one on last year. It was noted that four of these pairs successfully raised broods of two. The fifth pair arrived late and managed to lay a single egg however the nest was abandoned before the egg was hatched. It is thought that this pair were either inexperienced and breeding for the first time or had been displaced from elsewhere.

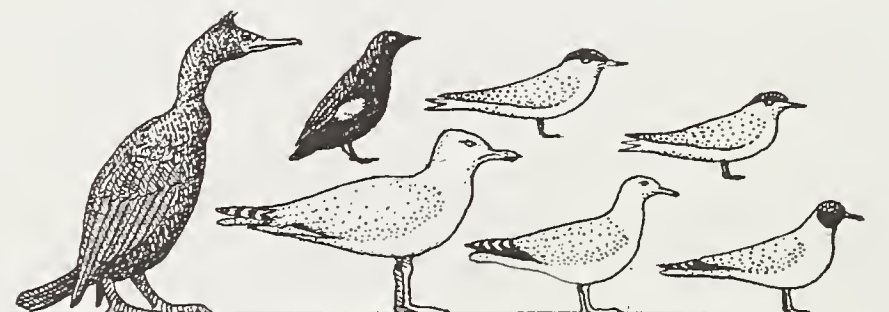
Sandwich Tern: No Sandwich Terns bred on the Forth islands this year. There were five pairs breeding last year.

Razorbill: Last year was a record year for Razorbills with 5,238 pairs being counted. This year their numbers were down to 3,562 pairs. However this drop may not be as bad as it sounds as Razorbill numbers in the last ten years have tended to be between 3,200 and 3,800 pairs. Although there were some changes in all the islands, the biggest numerical difference was on the May where there was an increase of 2,036 pairs between 2004 and 2005 and then a decrease of 1,738 pairs for the 2006 season.

Guillemot: The number of Guillemots breeding this year are up slightly at 28,576 birds compared to last year's count of 28,277 birds.

Thanks are due to the Forth Seabird Group for allowing the use of their figures and notes.

Bill Bruce



SUMMARY of SEA BIRD COUNTS for the FORTH ISLANDS 2006

	BIRD COUNTS													
	Bass	C'Leith	Lamb	Fidra	Eye br'tv	Inch keith	Carr Craia	Inch colm	Maystl	Inch Mick	Ig/Frb	Long Craia	May	Total
Fulmar (AOS)	46	157	7	176	0	334	0	240	0	41	240	0	298	1539
Cormorant (nests)	0	109	62	0	0	102	25	0	49	0	0	0	0	347
Shag (nests)	36+	118	65	198	0	165	15	6	1	57	0	0	485	1146+
Gannet (nests)	x	0	0	0	0	0	0	0	0	0	0	0	0	x
Eider (nests)	x	x	0	76	0	x	3	x	0	112	60	6	823	1080
Great B-b Gull (nests)	?	17-19	1?	0	0	4	1	0	0	1	1	0	25	>50
Lesser B-b Gull (nests)	x	x	9	162	0	x	3	x	3	135	18+	0	1732	2062
Herring Gull (nests)	x	x	51	917	0	x	38	x	12	257	152	0	2851	4278
Kittiwake (nests)	505	444	202	275	0	295	0	73	0	0	0	0	3167	4961
Common Tern (nests)	0	0	0	0	0	0	0	0	0	0	7	92	99	198
Arctic Tern (nests)	0	0	0	0	0	0	0	0	0	0	0	0	515	515
Roseate Tern (nests)														5
Sandwich Tern (nests)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Razorbill(pairs/sites)	169	175	62	123	0	53	0	5	0	0	0	0	2975, 3811 ind	3562
Guillemot	3230	1672+	1745	458	0	27	0	0	0	0	0	0	21444	28576
Puffin (as stated)	a few presnt	x	x	51	0	1,059	0	4	0	6 ind ashore	28 at sea	0	0	x 1148inds
				ashore nr light		land+se a		on sea						

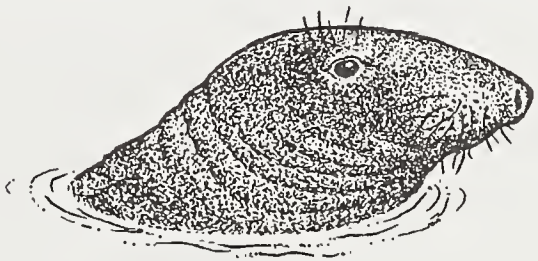
Ig/Frb=Inchgarvie and Forth Rail Bridge x=present but not counted; 0=none breeding; AOS=apparently occupied sites

ATLANTIC GREY SEALS

Once again a survey was carried out on the Atlantic Grey Seals coming ashore to give birth to their pups. The main colony is on May Isle where there can be 2,000 pups born. On Craigeith the count of 32 pups was one up on last year. The interesting finding was on Inchkeith. We visited this island for our “normal” visit on 12th November 2006 and counted 80 pups (up from 67 last year) and approximately 104 cows and seventeen bulls. By chance Ron Morris got the chance to go back out to Inchkeith five weeks later and, after taking into account the ages of the pups he saw, worked out that there had been an additional 50 pups born since the first visit. Just to be sure that we had a complete count we made a third trip just before Christmas and got an additional six pups. From this we should perhaps conclude that we need to make two visits to Inchkeith in future years, rather than just one.

Our counts, which do not include May Isle, show that the number of pups born is up from 110 last year to 176 this year.

Bill Bruce



ORCHIDS, BUTTERFLIES AND MOTHS IN DERBYSHIRE, OXFORDSHIRE AND KENT.

24th June – 2nd July 2006

Jeff Waddell and Roger Holme

This much anticipated holiday was planned to combine some of the best Limestone Dales in the north of England, with some of the best Chalk Downs in the south, not to mention watching England in the later stages of the World Cup! Our first stop was Monks Dale, which is typical of some of the best sites in the Derbyshire Dales NNR, being a mixture of Ash woodland, scrub, limestone grassland and cliffs with a crystal clear stream. A special treat was the Brown Argus, hardly surprising to see this, as the grassland was bright with Common Rock-rose *Helianthemum nummularium*, which in the Dales forms expansive colonies, dwarfing the best sites in Scotland.

Next day we started at Lathkill Dale, another part of the Dales NNR, where shady woodland opens out into steep limestone grassland. Almost immediately we spotted an unfamiliar plant growing on scree, which turned out to be Red Hemp-nettle *Galeopsis angustifolia*. This is a neophyte, more commonly seen growing as an arable weed, hard to believe it wasn't native in this habitat. The grassland was all quite similar, species rich turf with abundant Meadow Oat-grass *Helictotrichon pratense* and Common Rock-rose. Near the top of the slope we found something different: Nottingham Catchfly *Silene nutans* was frequent here. As we approached the plant a small iridescent green insect flew across our path and landed on one of the Catchfly flowers, later identified as a Cistus Forester Moth, a relative of the Burnet Moths and not unlike them in shape. Despite looking elsewhere in the dale we didn't see the Catchfly or the Forester again. Further up the dale there was much butterfly activity with a fresh Dark Green Fritillary and a Clouded Yellow. The main plant we wanted to see here was the native population of Jacob's Ladder *Polemonium caeruleum*. We were giving up hope of finding it when near the end of the dale, we spotted some purple flowers on the opposite slope. Having confirmed this was the plant, we admired its flowers, more purple than the garden variety. On the way back down the dale we were surprised to see a rather late Dingy Skipper.

On the way to Buxton, where we planned to watch England's progress in the World Cup, we stopped off for a quick visit to Plantlife's nature reserve at Deep Dale. Here the Cistus Foresters were abundant. Stone Bramble and Columbine added botanical interest. Later, on an evening visit to Cressbrook Dale we found Spring Cinquefoil *Potentilla neumanniana* and Rue-leaved Saxifrage *Saxifraga tridactylites*. An unexpected highlight was the Chalk Carpet, a nationally scarce moth of calcareous grassland, found resting on a cliff face, which was later confirmed as the first reported record of the species for the year.

The following day we travelled south to Warwickshire to visit Ryton Wood, a classic English Midlands coppice with standards woodland, still managed as such by Warwickshire Wildlife Trust. The wood is a nostalgic place for Jeff where his interest in butterflies and moths was kindled. The weather was poor, but we noticed a few Marbled White Butterflies.

Afterwards we travelled on to Oxfordshire. Near Charlbury we stopped off at an area marked 'access land' on the OS map. We assumed it must be a nature reserve or other area of unimproved grassland as such areas fall into the new 'access land' category. The field initially seemed disappointing, as it was quite rank and species poor grassland near the top. But we were soon drawn to a small enclosure, which had several plants of Meadow Clary *Salvia pratensis* in bloom, the highlight of the day. The field was also rich with other species, including Bee & Pyramidal Orchids *Ophrys apifera* and *Anacamptis pyramidalis*, the latter attracting Marbled White Butterflies.

Next morning we drove south stopping at unimproved meadows near Oxford, which are some of the best lowland meadows in England. At Yarnton Mead we were astounded by the size of the place. This alluvial hay meadow is on a different scale to those in neighbouring counties, with Great Burnet *Sanguisorba officinalis*, Dropwort *Filipendula vulgaris*, Pepper Saxifrage *Silene silaus*, Saw-wort *Serratula tinctoria* and Common Meadow Rue *Thalictrum flavum* stretching to the flat horizon. Scarlet Tiger Moth, netted here, was a new species to us.

Afterwards, we visited nearby Bernwood Forest, where, after much running about, we got good views of White Admiral Butterflies nectaring on Brambles. The holiday was off to a good start, with much seen before we had even arrived in Kent.

Later that day we arrived in Kent. With a few hours to spare in the evening, we chose to visit Creteway Down, an area of chalk downland near Folkestone. The large swathes of Pyramidal and Fragrant Orchid *Gymnadenia conopsea* were the best displays of Orchids either of us had seen and were a taste of more to come. Whilst walking back along the road verge Roger spotted an unusual plant. This was the nationally rare Bedstraw Broomrape *Orobanchaceae caryophyllacea*, confined to a very few sites in Kent, and this appears to be a new location for the plant. The flowers were definitely clove-scented, as it says in the flora and it appeared to be parasitic on Lady's Bedstraw *Galium verum*.

The forecast for the next day was warm and sunny. It was towards the end of the flight period for the rare Black-veined Moth, one of our target species, so we went straight to Wye Downs. We left the nets in the car as the moth is so rare we didn't attempt to catch any, in case they were injured. We entered the Devils Kneading Trough from above and walked through the tall Tor-grass sward, which was kept rank to benefit the moth. Very quickly we saw two individuals in quick succession. They were highly visible because of their bright white ground colour and relatively large size. Another hour or so was spent on the site, but we didn't see any more. We counted ourselves very lucky, to have seen any at all. Afterwards at a nearby site we saw our first Late Spider Orchid *Ophrys fuciflora* and an Adonis Blue Butterfly.

The next target species was the Heath Fritillary Butterfly, which is rare, confined to a handful of woods in south east England and a few heathland sites in the south-west. Again it was relatively easy to find at East Blean Woods, Kent Wildlife Trust nature reserve. There were only small coupes of coppiced Sweet Chestnut with a sparse herb layer harbouring the foodplant, Common Cow-wheat *Melampyrum pratense*. The Butterfly seemed to be doing well and was abundant in these small areas. Unlike most Fritillaries the Heath Fritillary is a weak flyer, and was easy to watch as it flitted about near ground level.

A chance meeting with a local naturalist led us to a location where we might see Musk Orchid *Herminium monorchis*. We went there and saw several at their best. They are small plants and could be easily missed, but not here! Botanical visitors to the site had been so numerous, that paths were worn in the grass, leading right to the orchids and encircling them. The chalk meadow flora was incredibly rich, with Late Spider and Greater Butterfly amongst the more common Orchids, as well as Pyramidal and Fragrant. We were told that the Monkey Orchid makes an appearance here earlier in the year.

The following day we chose to visit Sandwich Bay to look for one of Roger's target species, the Lizard Orchid *Himantoglossum hircinum*. On arriving the gatekeeper asked, 'are you here to see the Lizard Orchid'? We arrived at the dunes and any concerns at not finding the orchids were soon dispelled. The plants were visible from a distance, most being over half a metre tall. They don't seem to be fussy either, and were growing just as well in some of the local residents front gardens where neatly manicured lawns were dotted with the odd spike, obviously carefully avoided whilst cutting the grass. Within a few seconds of leaving the car, another rare target species, the Bright Wave Moth was netted as it flew over the Lizard Orchids. This moth only occurs in the UK at a couple of places on the Kent Coast.

The Dunes are incredibly rich botanically; indeed, the County Flora borrowed from the Nats Library, stated that Sandwich Bay was the top botanical hotspot in the

county. There was an abundance of Bedstraw Broomrape and the closely related and even rarer Sea Holly Broomrape, and Golden Samphire *Inula crithmoides* was another botanical treat for us. Yet another red data book species of moth, the Rest Harrow was netted. We also found Marsh Helleborine *Epipactis palustris* and Man Orchid *Orchis* (formerly *Aceras*) *anthropophora*.

In the evening we enjoyed dinner in the 'Hop Pocket', a superb country pub, with fine real ales on tap. We heard that there was a moth trapping session going on in nearby Covert Wood. This is a newly discovered key site on the moth-ers map, home to the only known UK colony of Dusky Peacock, a migrant, which has recently been found to be breeding in Covert Wood. A luminous Glow-worm was seen on a ride edge as we walked between traps; we weren't the only ones with lights in the wood. The night was balmy and the moths plentiful. For a rare moth the Dusky Peacock wasn't shy and over a hundred were seen at the various traps. It was like being a beginner again, with many unfamiliar species at the traps. The nationally-scarce Waved Carpet and red data book Triangle, were other rare species seen.

Next morning we travelled to the coast at Dungeness. A local moth recorder had arranged a whistle-stop tour visiting the garden traps of the 3 resident moth recorders, ending in emptying the moth traps at Dungeness Bird Observatory. Again many of the species were new, as the vegetated shingle at Dungeness is very different from any other habitat. The highlight was the red data book rare White Spot, restricted to a handful of sites on the south coast of England, where its larvae feed on Nottingham Catchfly. Unfortunately we were just too early to see the Sussex Emerald. Dungeness is the only breeding site for this species in the UK, which feeds as a larva on Wild Carrot *Daucus carota* growing amongst the shingle.

In the evening we visited Yocklett's Bank, a famous site managed by Kent Wildlife Trust. The Lady Orchids *Orchis purpurea* were well over, but we saw where they grew in coppiced areas and got a feel for the habitat. The remaining seedpods were present on surprisingly tall plants.

On the final day of the holiday we visited another Kent Wildlife Trust reserve, Lydden to Temple Ewell. This is a long chalk escarpment where you can walk for a couple of miles along unimproved chalk grassland giving a feeling of what this landscape must have been like before it was changed by modern agriculture. At one point, a small cage was spotted housing an Orchid. The flowers had gone, but we guessed it must have been Burnt-tip Orchid *Neotinea* (formerly *Orchis*) *ustulata*, later confirmed by the reserve warden. In the afternoon we visited the large chalk cliffs of Folkestone Warren. The scenery here was impressive and it almost felt like we had climbed a mountain by the time we had ascended the cliffs at the end of the day.

THE LINDISFARNE HELLEBORINE - *Epipactis sancta*

Jane Squirrell

Off the north-east coast of Northumberland lies the magical island of Lindisfarne, also known as Holy Island. Historically it is famed for its monastery (founded by St Aiden), the castle and the Lindisfarne Gospels. However, much of the island is a designated National Nature Reserve and is especially important for its wild flowers, insects and birds. It is also home to Britain's newest endemic Orchid, *Epipactis sancta*.

Although the population of *E. sancta* has been known for a long time, it has only recently had its taxonomic status re-evaluated. The genus to which it belongs, *Epipactis*, is a taxonomically complex group. This complexity arises from frequent transitions between cross and self pollination. There are several species within the genus with floral morphologies adapted to cross-pollination, as well as numerous named taxa with floral morphologies consistent with self-pollination. The distinction between these self-pollinating species is subtle and often contested.

In Britain, the *Epipactis leptochila* complex is considered controversial and has been treated differently by various authors. Some authors consider the plants that grow in southern England, mainly in Beech woodlands and have a sharply acute epichile (front portion of flower's lower lip), to be *E. leptochila*, while those plants recorded from coastal sites in north Wales (Anglesey), Lancashire and north east England (including Lindisfarne), growing on sand dunes or under pine plantations, and possessing a blunter and more recurved epicile, should be referred to as *E. dunensis*, a British endemic. In contrast, other authors have suggested that *E. dunensis* and *E. leptochila* should be reduced to sub-specific rank. To confuse things further, some authors have also suggested that the plants on Lindisfarne show an atypical floral morphology to that of *E. dunensis*.

The results of the molecular research, carried out at the University of Glasgow and the Royal Botanic Garden Edinburgh, the aim of which was to investigate this taxonomic complexity, suggest that the population on Lindisfarne forms a genetic lineage that is distinct from those plants considered as *E. dunensis* or *E. leptochila*. Since publication of this research, Pierre Delforge (a Belgium orchidologist) has considered that there was sufficient genetic distinction of this population for him to describe it as a new species, *E. sancta*. The naming of the Lindisfarne plants as a new species supports those who have noted the floral morphological differences from other British *Epipactis* species. Raising the taxonomic status of this Lindisfarne population to specific rank has resulted in the conservation status of this species being increased.

Currently these plants number less than 50 and are confined to the south west corner of Lindisfarne, in the dunes surrounding The Snook. I have been fortunate to visit this site a couple of times. Unfortunately on both occasions it was late in the season so the plants looked very small and ragged, but this may also have been due to rabbit grazing. Lindisfarne is a fantastic place and I would encourage people to visit the island and perhaps take the chance to look for this unobtrusive rare Orchid.

FURTHER READING

Hollingsworth PM, Squirrell J, Hollingsworth ML, Richards AJ and Bateman RM (2006) Taxonomic complexity, conservation and recurrent origins of self pollination in *Epipactis* (Orchidaceae). In: *Current taxonomic research on the British and European flora*. Eds Bailey J and Ellis RG. BSBI. London. pp 27-44.

SUPERFOOD?

Have you ever wondered about those masses of vibrant orange berries on the Sea Buckthorn, *Hippophae rhamnoides*, which we see on the East Lothian coastline? This writer was intrigued to read the following in his 2007 seed catalogue.

' A very attractive ornamental shrub with narrow, silver-green foliage and bright orange fruits that last all winter. Superb in the flower garden, or grown as a hedge, it performs well even on poor soils. What's more, the sharp, cranberry-flavoured fruits are renowned as a superfood - high in vitamins and anti-oxidants! Use them in pies, preserves, sauces and juice drinks. Berries are produced on female plants and require a male for pollination. Note that this plant has sharp thorns. Height Approx. 6M (20').

2 PLANTS (1Male, 1 Female) £17.95 '

(Reproduced by kind permission, Samuel Dobie & Son.)

John Watson

The Scottish Seabird Centre volunteers worked hard during 2006 to help instigate interest and concern about the problem of Tree Mallow blocking up the access to Puffins' nesting burrows on the island of Craigleith in the Firth of Forth. Leading the campaign was Maggie Sheddon, who first alerted our group to this problem. The SSC Bird-watching Group went into action.

We decided to organise a conference and invite experts to come to discuss the issue. Out of that conference emerged a five-year management plan to try to control the spread of the Tree Mallow.

Just before the conference, the Channel Four programme *Wild thing, I love you* came to North Berwick, and they filmed a group of volunteers, led by Maggie Sheddon, cutting down the Tree Mallow. The programme makers explained the problem to the viewers.

The five-year management plan needed funds to put it into action, so the Seabird Centre put in a bid to Viridor, the Landfill Site people, for money to carry out the project. The good news is that the bid was successful, and Viridor will provide total funding for the five-year management plan to go ahead.

The Craigleith project will use over 150 volunteers to cut down the Mallow at regular intervals, the cameras placed on the island allowing viewers from the Seabird Centre to see what is going on. The Viridor money will also fund the placing of a camera at the harbour in Dunbar to monitor the Kittiwake colony on the castle walls.

It will also be possible to extend the project to include the island of Fidra, which has also been invaded by the Tree Mallow. Scottish Natural Heritage and the Centre for Hydrology and Ecology will supervise the whole operation, with permission of the owner of Craigleith, Sir Hew Hamilton-Dalrymple. Sir Hew has insisted that the Scottish Seabird Centre takes a central role in all decisions concerning the project.

The Seabird Centre Volunteer Group raised £5500 to provide match-funding for the project. We ran a raffle which raised almost £4000 and we have many fund-raising events during the year to add to that money. We hope that the management plan will be successful, and that Puffins will once again nest in their thousands on Craigleith. Visitors to the Centre will then be able to watch them; these comical little birds are the most popular of the attractions at the Seabird Centre.

OH, NOW THAT SOUNDS A GOOD PLAN !!



HAZELS AT THE BOTANICS - This year the Hazels *Corylus avellana* flowered later than in recent years.

After four seasons in which the first flowering dates recorded were earlier each year, the trend has been reversed in 2006. Given how long it takes the catkins to develop, it is possible that the later flowering this year reflects last spring's cold spell, though that remains speculation.

The earlier flowering east bush flowered on 30th November 2006, compared with 15th November 2005 (26th November 2004). The west bush flowered on 3rd January 2007, compared with 16th December 2005 (31st December 2004).

Editors

Introduction

The purpose of this document is to provide a species account of the Grey Partridge (*Perdix perdix*) of Holyrood Park, Edinburgh for the summer 2006 season. As such it provides information on the distribution of the species, based on the methods documented in *Bird Monitoring Methods* (Gilbert, Gibbons and Evans, 1998).

It is a summarised version of the original, excluding as it does the detailed methodology, references, appendices and the maps showing the survey routes followed. An electronic copy of the full length original version can be obtained from GrahamCheckley@AOL.com.

Background

The Grey Partridge is an Edinburgh Biodiversity Action Plan priority species (EBP, 2004), and its management within Holyrood Park is included as part of the Seed Eating Birds Species Action Plan.

It is a resident game bird of open farmland and meadows, particularly where cereal and pasture are present, and has been identified as a priority species, as a result of the dramatic decline in its UK population over the last forty years (Gilbert, Gibbons and Evans, 1998). While once adult, the birds can live up to 5 years (RSPB, 2006) they are, as young, highly dependent on insect-rich brood rearing habitat (Aebischer, 2003).

The Historic Scotland Ranger Service (HSRS) established a log of casual wildlife sightings in January 2000 and since then has regularly recorded the presence of Grey Partridge within the Park, the observed locations being detailed in Appendix One. Prior to this at least three pairs were noted as breeding in 1993, and a covey count of 17 was noted in 1982 (SWT, 1993).

As the 1993 survey represents the last systematic study of the species within the Park it was decided, following discussions with Natalie Taylor and Jenny Hargreaves of HSRS, to carry out a breeding season survey of the population in March 2006.

Aims

To determine the distribution of Grey Partridge within Holyrood Park at the start of the summer 2006 season.

Methodology - Survey Areas

The areas surveyed were: Duddingston cultivation terraces, Dunsapie Crag, Whinny Hill (entire), Crow Hill, Nether Hill, The Dry Dam, Slopes east of Salisbury Crags.

Please note that while Holyrood Park is a site of Special Scientific Interest this does not guarantee unrestricted access to any of the areas mentioned. The proposed and actual survey routes are shown as maps in Appendices Two and Three of the full length version, the proposed routes being based on an analysis of the location of previous incidental records shown in Appendix One of the original.

Two survey teams were employed, working in parallel to cover the Arthur's Seat (team of 3 plus dog) and Salisbury Crags (team of 4) routes within the two hour time window, spanning the half hour before and the hour and a half after sunrise.

For both routes, surveyors walked a line abreast at approximately 20 metre intervals. The dog with the Arthur's Seat team was allowed to run free as long as visible to its owner, allowing any birds that it flushed to be positively identified by the survey team.

Exclusions

Time constraints did not allow the Wells o' Wearie or the area to the west of Samson's Ribs to be surveyed in 2006. The area north of the Hunter's Bog water body was not surveyed as it had been short mown.

Survey date and conditions

Due to adverse weather conditions on the 14th March the survey was rescheduled for the 21st March 2006 between 06.15 and 08.15. The weather conditions on the day were 0/10 cloud, 5mph N wind, temperature 3°C,

therefore within the ‘calm and preferably dry’ conditions specified in the Grey Partridge survey methodology (Gilbert, Gibbons and Evans, 1998). This methodology specifies mid-March for the survey as the birds will have paired by then. Therefore, the delay of one week was not considered to be significant.

Results

Count	Location	Comments
2	East top of Crow Hill (NT279728)	Flushed by dog at 0715, flew south

Discussion - Methods

In order to carry out the survey within the required time window, a third survey team should be employed to cover the Wells o’ Wearie and the area to the west of Samson’s Ribs.

A dog per team would be a useful addition, as the experience of the Arthur’s Seat team indicated that dogs were useful in flushing birds from areas of deep grass, where they would otherwise be out of sight of the surveyors.

Species account

The noted decline in incidental observations since 2001 (See Appendix One of the full length version) fits in with the observation of only one pair of birds during the survey. Also, the number of birds seen is at the low end of the average number of birds per sighting shown in that appendix. Nonetheless a casual record of two young birds at the same location in August (HSRS, 2006) does suggest that breeding is still taking place within the Park.

This decline appears to fit with the national decline of the species noted by the British Trust for Ornithology (BTO, 2000). The BTO have noted a marked decline in the UK Grey Partridge population over the period 1978 to 2000 (last date), the species now being placed on the priority species list due to its “rapid decline”.

Factors that have been blamed for the national decline in Grey Partridge are:

- Loss of nest sites (such as hedge bottoms) to farm intensification
 - Reduced food supplies and sources for chick food through the use of pesticides and herbicides, as well as the loss of winter stubble feeding grounds for over-wintering birds
 - Vulnerability of nests to predators in farmland with poor cover
 - Nest destruction caused by early mowing and other farm operations
- (UK Biodiversity Partnership, 2006)

No evidence has been found supporting the suggestion that a factor in the decline in Grey Partridge numbers is competition from Red-legged Partridge (British Garden Birds, 2006).

While many of the above factors do not directly affect Holyrood Park it has been suggested that the decline in the reserve population outside of the park may now be weakening the resident gene pool, simply in terms of making it more difficult to replace losses with birds from outside the park (pers. comm.). Also, if the accumulation of rank grasses in certain areas of the Park since the end of sheep grazing in 1978 has reduced insect-rich brood-rearing habitat, this could, where a critical factor, adversely affect chick survival rate (Aebischer, 2003).

Further Study/Work

While it would be possible to continue to monitor the species through miscellaneous wildlife records the experience to date suggests that a more systematic approach is required. While the Grey Partridge survey methodology (Gilbert, Gibbons and Evans, 1998) suggests an annual survey a reduced frequency may need to be considered against the other conservation priorities for the Park.

Conclusions

The 2006 survey of Grey Partridge in Holyrood Park, Edinburgh established the presence of at least one breeding pair for that season. The Park population of this species appears to have been declining since 2001, possibly reflecting the general UK decline of this species.

Acknowledgements

My particular thanks to Natalie Taylor for the time she spent in reviewing this paper, and to the other staff and volunteers of the HSRS for their assistance with the survey. Lastly, many thanks to Jenny Hargreaves for not only making her staff available but for the bacon and egg rolls served up to all participants!

COMMAS AGAIN

On my first visit to the newly opened Waterson Centre (S.O.C. HQ) near Aberlady Village on Saturday 9th August, I was very amused to find that a Comma Butterfly was the star exhibit of the day. A bed of small headed Michaelmas Daisies had been planted at the entrance to the Centre. The day was hot and sunny, and so a variety of Butterflies were being attracted to these flowers. Almost immediately we entered the Centre the Warden was greeting everyone with the words 'Have you seen our Comma Butterfly' and if the answer was 'No' then visitors were taken to see this rarity.

As well as the Comma there were several Silver Y Moths and Painted Lady Butterflies, and a Small Copper Butterfly, all on this one patch of flowers. There was also a Peacock flying around. I must add that I was given instruction on the identification of the more unusual of these Butterflies by a member of staff at the Centre, as Butterfly identification is not one of my strengths, so I learned a lot on that one short visit.

Heather K. Robertson

CLIMATE CHANGE

BUTTERFLIES

We ought to be reporting on sightings of unusual Moths and Butterflies in every Journal, because changes are certainly happening. Butterfly Conservation Scotland (BCS) report that there have been unusually high numbers of migrant Moths and Butterflies in Scotland this summer. There have been many changes in the last few years, some of our native Butterflies becoming rarer, and formerly rare ones becoming more frequent. Mountain Ringlets have disappeared from one-third of their former sites; and the Scotch Argus has disappeared from one quarter of its sites. These two like cooler climates and so are probably migrating north and uphill. Large Heath and Small Pearl-bordered Fritillary are both declining in the Borders, perhaps moving north, too.

Butterfly Conservation Scotland reports that they have had quite a few Comma sightings this year from our area. Caterpillars have been found for the first time in Scotland, so they really have taken up residence.

There were a number of records of Clouded Yellow Butterflies from Angus, Fife, Perth and the Borders this year, but ours at Cobbinshaw is the only one reported in the Lothians, although there have been a few scattered sightings over the last 10 years from Linlithgow, Hopetoun, Cammo, Musselburgh and St. Abbs.

A Small Skipper was sighted at Harestanes and at Newcastleton, the first in Scotland. In August several Holly Blues were seen on Snowberry in Lasswade - another new Butterfly for Scotland. A Speckled Wood, seen in Edinburgh in October, is a first record for the Central Belt.

BEEES

The Bumblebee Conservation Trust reports that it expects the Buff-tailed Bumblebee *Bombus terrestris* to give up hibernation in Britain within two years. This behaviour has this year reached as far north as York.

HUMMINGBIRD HAWKMOTHS

We have a few reports in the Journal of Hummingbird Hawkmoths. Usually a few of these are seen in Scotland every year, but this year there has been a huge number of sightings. We have a number of reports of the Silver Y Moth, including 19 from Jackie. BCS's website reports 'a population explosion. They arrived in Europe from North Africa in vast numbers in early summer. By July they had reached Scotland in numbers far greater than anything seen here before.'

Keep your eyes peeled in 2007 and let us know, please !

Editors

OUR JUNIOR MEMBERS

It is very good that we have a few Junior members in the Nats. One of them, Elspeth Macintosh, whose Mum is on the Council, has given us two drawings to illustrate the lovely poem she sent us. Thank you, Elspeth.

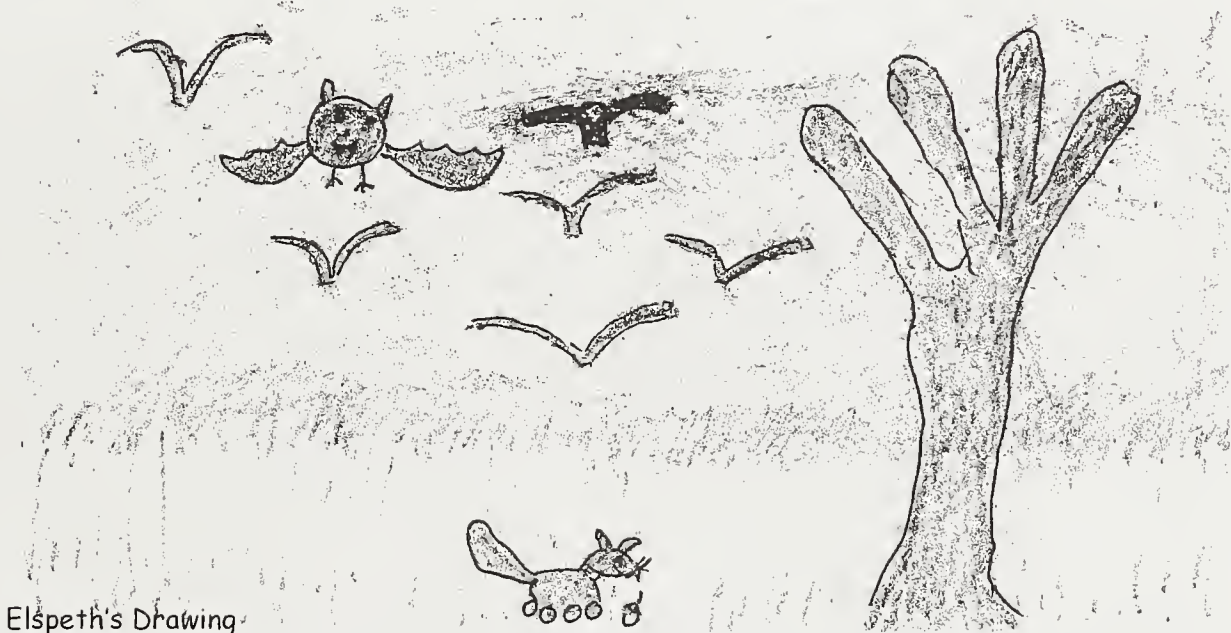
We thank Patrick Adamson for the splendid photograph of the Viviparous Lizard he saw on the Nats outing to Baddingsgill.

NATURE



A Bat is flying through the air
There is a slight breeze
Squirrels nibble nuts.
Leaves grow on trees.
Birds fly through the sky.
Bees Buzz.
Different seasons mean different
animals and plants.
A thousand years go by and it is still
there.

NATURE



HEDGEHOG RESCUE

Mary Clarkson and I returned from Michael Braithwaite's outing on 1st July, by way of Longformacus where we were able to rescue a Hedgehog which crossed the road in front of us and tried to climb a low wall. It was the first time either of us had seen a Hedgehog for some time, and we were able to put it on the grass above the wall where it promptly disappeared into a wood. Goodness knows what the motor cyclist behind us thought when we suddenly drew off the road.

Jackie Muscott



EAT YOURSELF POISONOUS

In a marshy area near Tynninghame on 18th June I noticed some well-chewed Hemlock Water Dropwort *Oenanthe crocata*. The culprit was a small grey caterpillar with black and orange spots, the larva of a micromoth *Depressa daucaella*. Hemlock Water Dropwort is very poisonous, but the caterpillar is unaffected, presumably able to sequester the poisons and make itself unpalatable, as does the better-known Cinnabar Moth caterpillar *Tyria jacobaeae*. The latter feeds on another poisonous plant, Ragwort *Senecio jacobaea* and can sometimes reduce a patch of Ragwort to blackened stalks. The Cinnabar caterpillar and its moth are both brightly coloured, the orange and black rings on the caterpillar and the scarlet and black colouring of the moth acting as warnings to predators. These warning colours are brandished by other poisonous insects, Ladybirds for instance and Burnet Moths, though these make their own poisons: Cyanide, I believe in the case of the latter. Best not to eat them.
Jackie Muscott

On 25th November Sweet Chestnuts *Castanea sativa* were gathered, and subsequently eaten, in Dalkeith Park. They don't usually ripen in Scotland, but Bob Saville also reported some at Vogrie.
Jackie Muscott



SILVER Y MOTHS

The Silver Y *Autographa gamma* is normally a migrant moth, though larvae may sometimes over-winter in the south of England - and of course we've been having mild winters recently, so the 'resident' population may be on the increase. Moths appear in the Lothians most years in late summer, but this year they have been unusually abundant. As far as I am concerned the first sighting was at St Abbs on June 3rd, and the last near Livingston on September 17th, while the largest number (14) was noted on the coast near Coldingham on a sunny day in late June, along with no fewer than 11 species of Butterfly.

The most northerly sighting was at Hillswick on the north-west mainland of Shetland - interesting because the 2004 *Field Guide to the Moths of Great Britain and Ireland* gives the most northerly sighting as Fair Isle. And the most westerly was in Antrim, Northern Ireland.

The brown moths fly on sunny days and can be recognised by their constantly vibrating wings, even when actually sitting on a flower, and the Y (or gamma) markings on the wings themselves. The larvae apparently feed on Bedstraws, Clovers and Nettles, but, if pushed, are not averse to peas, cabbages and runner beans - so with global warming we could soon have a pest on our hands!

List of sightings in 2006

June 2006	Warrender Park Road, Edinburgh (1)	3rd June	St. Abbs (1)
10th June	Inchmahome, Lake of Monteith (1)	15th June	Spey Bay (4, includ.1 mating pr)
3rd July	Kirkliston (1)	4th July	Uphall Station (1)
15th July	Hillswick, Shetland (1)	27th July	Longniddry Bents (7)
28th July	Coast near Coldingham (14)	29th July	Blawhorn Moss (2)
3rd August	Aberlady (2)	5th August	Ettrick Marshes (3)
17th August	Murlough Bay, N Ireland (2)	17th August	Breen Oak Wood, N Ireland (1)
19th August	The Binn, Burntisland (5)	9th September	Coast, Dalmeny Estate (4)
10th September	Near Dalmeny Village (1)	16th September	Near Stoneybum (5)
17th September	Near Livingston (1)		

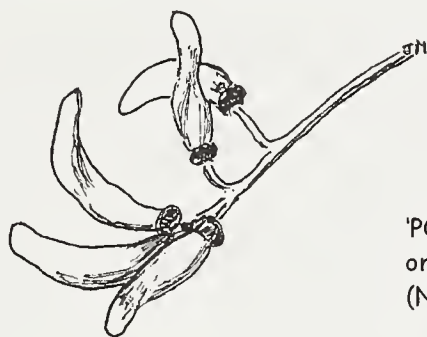
Jackie Muscott

There are many reports in the Journal, in Excursions and Observations of sightings of the Silver Y Moth, the biggest number being around 30 at Longniddry in June, and the latest report on 22nd October at Blackhall.

POCKET CHERRIES and POCKET PLUMS

On 12th May I noted distorted fruit - Pocket Cherries - developing on a Bird Cherry *Prunus padus* in Blackford Glen, and the next day, similar distorted fruit on a tree by the Union Canal. The cause of the problem is a fungus, *Exobasidium padi*. A similar fungus *E. pruni* infects Cultivated Plums *Prunus domesticus* and Sloes *Prunus spinosa*, producing distorted fruit known as 'Pocket Plums'. Some of the Sloes which grow by the steps leading up from Duddingston Loch are usually affected, and on 28th May I duly located some.

POCKET PLUMS
on *Prunus spinosa*
(Stigmas shed from fruit)



'POCKET CHERRIES'
on *Prunus padus*
(Note stigmas on end of fruit)



CROWN RUST

Higher up, just below Dunsapie Loch is a small grove of Buckthorn *Rhamnus catharticus*. It is pretty uncommon in this part of the UK, being more usually found on limestone in the south, but in the last 2 years it's been doing very well, producing masses of black berries in small clusters. On 28th May I was delighted to find the leaves infected by the Crown Rust *Puccinia coronata*, which reproduces sexually on the Buckthorn and then transfers to a wide variety of grasses. Without Buckthorn, it misses out the sexual stage, but continues to reproduce asexually on the grasses.

Jackie Muscott

This is the tree which Michael Braithwaite challenged us to identify at the beginning of his outing. this year. The generic name for the Wild Cherry was formerly *Cerasus vulgaris*, from Cerasus, the old name of a town in western Asia, from where it is said Lucullus, a wealthy Roman soldier, first took wild Cherries for cultivation in Italy.

Prunus cerasus is also known as Sour Cherry and a form of it is most probably Morello Cherry, used to make preserves such as Black Cherry jam, when the fruit loses much acidity.

Lyn Blades

EUROPE'S REVENGE ?

We are always complaining about aliens which cause us so much frustration in our gardens and in the countryside: Few-flowered Leek *Allium paradoxum* from the Caucasus; Pirri-pirri-bur *Acaena novae-zelandiae*; Tree Mallow and Japanese Knotweed *Fallopia japonica*. Ah, well, Japanese Knotweed. It was introduced into this country as a garden plant in the 1800s, and spread quickly. Now it grows in dense clumps and shades out our native flowers, spreading by underground shoots. It appears that we are getting our own back for that one! Our humble Dandelion is causing great anguish throughout Japan, where it is spreading rapidly.

Apparently the wind-blown seeds of our Dandelion are viable without the flowers being pollinated, whereas the Japanese version *Taraxacum japonicum* needs to be pollinated to produce seeds, but if the European Dandelion's pollen reaches the Japanese flower, it will be left barren. Not much chance for the native, then !

Sandra Stewart

PINE LADYBIRD at the ROYAL BOTANIC GARDEN EDINBURGH

On a visit to the Botanic Garden in May 2006, I observed many Ladybirds on one particular Apple tree, which was in beautiful blossom.

These were:

Adalia bipunctata quadrimaculata, a variety of the 2-spot, red spots on black.

Adalia bipunctata typica, the typical 2-spot.

Adalia 10-punctata variabilis, a variety of the 10-spot which has spots missing.

Adalia 10-punctata, the Chequered Ladybird which has red spots on black.

Adalia 10-punctata typica, the typical 10-spot.

Calvia 14-guttata, the Cream Spot.

On wandering farther afield, I came upon a Rhododendron covered in a black smut. On looking closely at the black mess I realised that there were many Ladybirds moving around. These were the Pine Ladybirds, *Exochomus 4-pustulatus*. To my knowledge the Pine Ladybird had not previously been recorded in the Lothians. There are a few records of the Pine Ladybird nearer the Borders.

Ena Gillespie

Look for Ena's Ladybirds on the photos pages.

ΛΛ

A BRIEF NOTE ON A SMALL MATTER FROM A MEMBER

Usually, early in the afternoon on Wednesdays, I walk along Broomhall Avenue in Corstorphine where the houses are the typical '4 in a block'. Broomhall Avenue links the Broomhall Estate with Carrick Knowe.

One day in late Spring 2006 was different as, when I reached the opposite side of the road from the Boy Scouts' Hut, a Magpie was shrieking loudly on the roof of one of the blocks which has a triangular lawn. This lawn is separated from the road with a small wooden fence, and from the next block on the east with a mixture of privet and dwarf conifers.

I looked down and there was a male Kestrel over a dead Pigeon. A young woman walked past with a heavy tread oblivious of what was happening just to her left, a maximum of 2 metres from hand to birds but the Kestrel concentrated on the Pigeon and he dragged it backwards into the dividing hedge. Conveniently the hedge had a gap in it that was like a cave and most of the Pigeon was no longer visible to the Magpie.

Sadly I had to creep away to keep my appointment but when I returned, there were just feathers that stayed for a few days before the wind blew them down the street.

It is not unusual to see a Magpie and a Pigeon (dead or alive) in Edinburgh and I have been fortunate to have worked for a short time overlooking a pair of Kestrels' city centre flat, but I have never seen a Kestrel on the ground so close to passing humans and with prey larger than itself.

Joe Wright

AA

ALL THINGS BRIGHT AND BEAUTIFUL: THE DARK SIDE OF NATURE

During the Nats trip to Dawyck on 27th May, I happened to notice a large fly (St Marks) blunder into a web belonging to a very small spider. As the fly struggled, the spider dashed over to it and climbed onto its back. It was just a speck on the fly, but presumably it quickly dug its fangs in, for just as the fly looked as though it would break away, its struggles reduced and then ceased. I should imagine the spider had enough food for a week.

Later during our excursion to the Meldons on July 22nd we watched large numbers of Common Blue Damselfs mating and laying by a large pond. Unfortunately the egg-laying was a hazardous process, for the pond was full of fish (?trout) and every so often there would be a splash as a fish jumped and snapped up another pair of Damselflies. Dragonflies, Damselflies and their larvae are themselves voracious predators however; I once saw a Damselfly consuming a Daddy-long-legs as big as itself.

Jackie Muscott

NUTHATCH UPDATE AND OTHER GARDEN OBSERVATIONS from GALASHIELS

Two days after setting up the bird feeders for the winter I was delighted to see two Nuthatches, which have been regular visitors ever since.

I have noticed that they seem particularly fond of the Autumn and Winter seed mix I'm using, as well as tucking into whatever is in the dish on the table; peanuts come last. They also come together quite a lot. I presume they are a pair and I wonder if they managed to raise a family.



Walkabout phones are useful. Sometimes you notice things while having a conversation. A few days ago I saw a male Blackcap in the bushes and hoped he might overwinter as that would have been a first, but I haven't seen him since.

Having been away I thought I had missed the Long-tailed Tits which usually go through in September, but a family of 8 have visited three times and it's well into December. As the bird table is so near the kitchen window, it is interesting to watch which birds tolerate others, and what the pecking order is. This research is still ongoing. A really cold spell could change things.

So far I have not had a Grey Squirrel - maybe my cunning devices are working.

Jean Murray

COCHLEARIA MEGALOSPERMA

Elspeth Hamilton and Connie Stewart had noticed a tall, robust white Crucifer growing along an old stone wall and on the verge of a lane near Humble Kirk. In November 1996 they took Helen Jackson, BSBI Recorder for East Lothian, to see it. She sent a specimen to Dr. Jim Richie, the Crucifer expert, who identified it as *Cochlearia megalosperma*. This plant was previously regarded as a variety of *Cochlearia glastifolia* but was upgraded to specific rank.

C. glastifolia: fruiting pedicel 1.5 - 2.5 times as long as the fruit; capsule 6-8 seeds.

C. megalosperma: fruiting pedicel 3-4 times as long as the fruit; capsules 6-8 seeds.

C. megalosperma or Tall Scurvy Grass is an annual or short-lived perennial with stems erect to 1-1.5m, which is native to mountains in Southern Spain. It is recorded in only three sites in Britain: East Lothian near Humble Kirk; a bomb crater near Box Hill; and in Nottingham.

In Nottingham, plants were cultivated in the Pharmacy Garden on the main campus of the University of Nottingham and spread from there. These plants originated from seed obtained from the collection of Zentralinstitut für Genetik und Kulturpflanzenforschung, Gatersleben, then part of East Germany. The roots were needed for phytochemical work on precursors of tropane alkaloids. These alkaloids occur in Solanaceae, but this is the only Crucifer genus to contain them. Tropane alkaloids are important medicinally as a source of local anaesthetics, cocaine etc. The medicinal plant research at Nottingham and the Pharmacy Garden are things of the past.

In 1999 the Humble plants were cut down drastically by a local, but fortunately they still flourish along the old wall, although there are no longer so many along the verge of the lane.

In June of this year *C. megalosperma* was a beautiful sight with the sun shining on masses of white blossom.

Margaret White

BROWN RATS ON CANNA

Rats have had a devastating effect on the seabird population on Canna. It was thought that there were 10,000 on the island. The National Trust for Scotland who own the island, employed a team of ratcatchers from New Zealand who have virtually exterminated the pest. Once it is confirmed that the operation is complete and that no poison remains on the island, a population of woodmice which had been removed for their safety, will be returned to their native habitat.

Elizabeth Farquharson



EXCURSIONS 2006

		DATE	PLACE	LEADER
January	14th	Saturday	Vane Farm Reserve	Joanie Fairlie
February	18th	Saturday	Yellowcraig - North Berwick	Excursion Committee
March	25th	Saturday	Belhaven Bay	David McAdam
April	8th	Saturday	Muiravonside	Lyn Blades
	29th	Saturday	Baddingsill	Mike Jones
May	6th	Saturday	Ayr Gorge	Joanie Fairlie
	10th	Wednesday	Boghall	Molly Woolgar
	13th	Saturday	Union Canal - Linlithgow Bridge	Jackie Muscott
	20th	Saturday	Pencaitland Wood	Lesley Fairweather
	27th	Saturday	Dawyck	Jean Murray
June	3rd	Saturday	St. Abbs	Grace Jamieson
	7th	Wednesday	Harlaw	Margaret Perry
	10th	Saturday	Lake of Menteith	Lynn Youngs

NAIRN

Monday 12th - Friday 16th June

	24th	Saturday	Humbie Wood	George McDougall
	28th	Wednesday	Corstorphine Hill	Stephan Helfer
July	1st	Saturday	Hell's Cleugh	Michael Braithwaite
	5th	Wednesday	Milkhall Pond	Neville Crowther
	8th	Saturday	Holy Isle	Neville Crowther
	12th	Wednesday	Holyrood Park	Natalie Taylor
	15th	Saturday	Seacliff	Neville Crowther
	19th	Wednesday	Boghall	Janet Watson
	22nd	Saturday	The Meldons	Eric & Eileen Perry
	29th	Saturday	Blawhorn Moss	John Watson
August	5th	Saturday	Ettrick Marshes	Mary Clarkson
	12th	Saturday	Tynninghame	Chris Ellis
	19th	Saturday	The Binn	Frances & Munro Dunn
	26th	Saturday	Hopes Reservoir	Jackie Muscott
September	2nd	Saturday	Penicuik Estate	Heather McHaffie
	9th	Saturday	Hound Point	Tom Delaney
	16th	Saturday	Stoneyburn Bing	Mary Clarkson
	23rd	Saturday	Witch Craig, Bathgate Hills	Betty Mitchelhill
	30th	Saturday	Lord Ancrum's Wood, Newbattle	Mike Richardson
October	14th	Saturday	Woodhall Dean	Neville Crowther
November	18th	Saturday	Aberlady Bay	Bill Clunie
December	28th	Thursday	Ratho	Janet Watson





Belhaven Bay in March



Buoy-making Barnacle
Lepas fascicularis



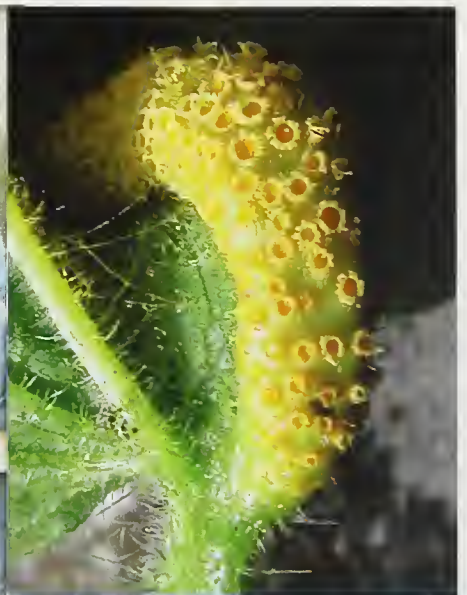
Patrick Adamson (Age 13) took this amazing photo of the Viviparous Lizard on the Baddinsgill outing



A well-earned rest at Ayr Gorge in May



Waiting for a bus ? No, just sheltering actually. Pencaitland in May



Aecia of rust *Puccinia urticata* on Nettle, at Humble



Rare narrow-lipped Helleborine, now a separate species, *Epipactis sancta*



Getting down to it. Typical Nats pose !
Looking for *Trifolium micranthum* at Spey Bay



Marbled White Butterfly on Pyramidal Orchid
Oxfordshire in June



Marsh Helleborine *Epipactis palustris* -
a breath-taking spectacle at Holy Isle



This is Ellie's Aspen Hoverfly with its yellow blob



We can relax now, Eric !



Studying the catch at Seacliff



What's that down there?

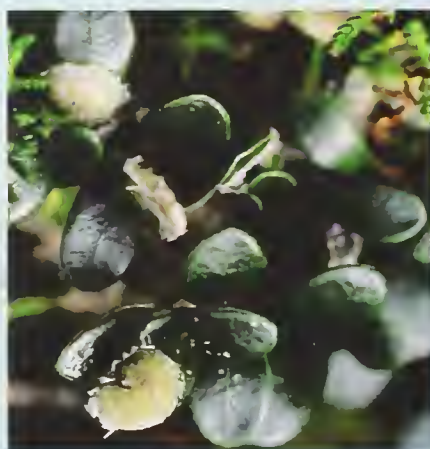
Ettrick Marshes in August



Little Egret at Vane Farm



Identifying fungi at Stoneyburn Bing in September



A rare fungus *Exobasidium sydowianum* on Bearberry

Black-tailed Skimmer in Berwickshire. A new species for Scotland. (Page 5)



Munro & Frances at The Binn, Burntisland



Pine Ladybird *Exochomus 4-pustulatus* on Rhododendron in RBGE
A first for the Lothians

Elsbeth's Puffin



Four of the six Ladybirds seen on one Apple tree one day in May at RBGE (Page34)



10-spot var. Chequered



A variety of 2-spot 4 maculata



CreamSpot-2



A typical 10-spot



VANE FARM

Date 14th January
Leader Joanie Fairlie

I visited Vane Farm in October last year and had wonderful views of the Little Egret, a winter visitor to the reserve for some years, hence my picking Vane Farm for this outing. Sadly this time the bird didn't show itself quite so close, although everyone got a pretty good view of it.

Vane Farm is part of the Loch Leven National Nature Reserve and is owned and managed by the RSPB with 230 hectares of wetland, wet grassland and woodland. The rest of Loch Leven NNR is managed by SNH. The loch itself is home to more breeding ducks than anywhere else in inland Europe, and attracts thousands of other wildfowl for long and short term stopovers, giving year-round interest and making it of global importance. The RSPB and SNH work together to maintain and enhance the loch for wildlife and people.

The first thing I saw was a Buzzard, sitting on the Vane Farm entrance sign as if to welcome us to the reserve. Around the car park were Greenfinch, an extremely confiding Robin, Jackdaws, Crows and Rooks, and of course what car park would be without a Chaffinch!

The excursion began at the first hide, the Gillman hide. It had been a very cold night and unfortunately the window panes were pretty much iced over, so we didn't linger, but moved on to the Waterston hide. Very quickly, the Little Egret was spotted, sitting on a muddy islet. For comparison, we had a good view of a Heron; the Buzzard put in an appearance, three Cormorants flew past and I had a very fleeting glimpse of a Gadwall (now you see it, now you don't!).



On the water were Tufted Duck, Teal, a Great Crested Grebe and Dabchick, with Crow, Starling, Curlew, Peewit, a small gaggle of Greylag Geese and approximately 100 Pink-footed Geese all in the fields around the loch. At the third, the Carden hide, the Little Egret put in another appearance; there was another Buzzard (no shortage of these); and we were able to add two pairs of Goosander, Stonechat and Reed Bunting to our list.

The group had split up a bit by this time, and the rear guard adjourned to the first hide for a spot of lunch, where we caught up with some other Nats, already chomping! The sky had cleared and the sun had come out to melt the ice from the windows of the hide. From here we had tremendous views across the loch of about 25 Goldeneye (mostly male), a Shoveler, Moorhen, Coot, lots of Wigeon, Mallard, 25 Mute Swans, Black-headed Gulls and the pièce de resistance here, one male Smew.

Late in the afternoon Natalie and I had a quick walk up the hill through the woodlands before it got dark. We met some Nats who were on their way down. The woods were quite busy with lots of little birds: all the Tits - Long-tailed, Great, Blue and Coal; Robin, Wren, Dunnock, Goldcrest and Treecreeper; and I am delighted to report, we managed to catch up with the Redpoll which someone had reported seeing earlier. By this time it was getting dark and we popped into the shop for a little retail therapy to end the day. I hasten to add, there were other Nats contributing to the RSPB shop!

To conclude, my thanks to Nev for sending me his bird list, which I have incorporated into this report.

Joanie Fairlie

YELLOWCRAIG TO NORTH BERWICK

Date 18th February

Sunshine in Edinburgh no doubt helped to produce a good turnout for this winter walk (19Nats). The weather on the coast was dull and dry, but the sight of Snowdrops and Aconites in flower at the start cheered us on our way. Along the shore there was lots of bird interest: Cormorants, Oystercatchers, Turnstones and Purple Sandpipers on the rocks; Eiders rafting on the sea; and waders including Sanderling, Godwit, Curlew, Redshank and Knot on the tideline; and a Skylark rising from the Marram Grass.

On a sheltered part of the shoreline towards North Berwick, Wallflower and Greater Periwinkle were in flower, and nearby were plants of the invasive Tree Mallow which is causing such problems for the Puffins on Craigleith.

We had a pleasant outing, with picnic lunch on the beach and coffee at the Sea Bird Centre. Most of the party walked back.

Editors

BELHAVEN BAY

Date 25th March
Leader David McAdam



David McAdam, our leader, characterised this as a day to watch geology in action. Although the underlying bedrock is over 300 million years old, the landscape of Belhaven Bay is still forming and changing.

There are several reasons for the changes. The land is still rising after the last ice age, and the land behind the shore on which the car park and leisure park are situated is a raised beach. Wind created the line of dunes in front of the car park, and from a vantage point on the dune one sees in front the saltmarsh which has been exposed by the retreat of the sea; and further out, close to the present beach there is a second line of dunes which has formed in comparatively recent times. Photographs from 100 years ago show there have been substantial changes since then.

From this point on the dune, we retreated a short distance, passing the unusual animals in the small children's zoo westwards, and then took the path to reach the area near the estuary of the Tyne. Here there are places where the tides are undercutting the trees, causing them to fall onto the beach and exposing the roots of the trees that remain upright. But nearby, there are other areas where sand is being deposited by wind and tide, and the land is extending into the sea. Across the Tyne, the spit of land known as Sandy Hirst has been extending eastwards. The main agent producing such changes is the swirling action of the tides within an area that has been sheltered by the growth of a sand bar where the Tyne meets the sea. It was interesting to note that the plant which appears to colonise exposed sandy areas is Glasswort *Salicornia* sp.; in the areas that have become drier, Viper's Bugloss *Echium vulgare*, the plant of East Lothian, quickly follows on.

Across the small burn from this point, is an area where undercutting by the tides has exposed sand deposited by the sea, and on top of that, Aeolian or wind-blown sand. There is a clear division between the two, the upper layer being lighter in colour with less shell material and without layering or structure. The sand laid down by the sea on the other hand shows the striation bedding and wave effects that are found in many sandstones; if left undisturbed for a sufficiently long time it will become sandstone.

Following lunch, we walked out across the sand marsh to the 'island' which has been continuing to expand in recent years. It is covered with Sea Buckthorn *Hippophae rhamnoides* which has helped to stabilise the sand accumulation. From there we walked back along the shore, crossed the isolated bridge over the Biel Water, and returned to the Linkfield car park via Seafeld Pond, the old flooded clay pit by the caravan park. This part of the day became effectively ornithological. Joanie Fairlie and Mary Tebble were active in noting the bird species and found an impressive total of 45. Among the more unusual sightings were Bar-tailed Godwit, Greenshank, Scoter (type undetermined), Brambling and Twite. Among others, Seafeld Pond produced Wigeon, Tufted Duck, Goldeneye, Pochard and Dabchick.

It was a beautiful day, much appreciated by all who took part.

Andrew Gilchrist

MUIRAVONSIDE COUNTRY PARK

Date 8th April
Leader Lyn Blades

It was a day of wildly fluctuating weather, from drenching rain when we met in the morning to glorious sunshine in the afternoon. Some stalwarts ventured onto this unpromising scene to explore Muiravonside. The park, comprising 170 acres of the policy woodlands and parklands of a former 18th century estate, was acquired by Falkirk Council some 30 years ago. At its north east point, it abuts the line of the Union Canal, and on its south and east aspects it is bordered by the River Avon, which flows through a spectacular gorge at this point of its course.

As the spring had been very cold (the Pentland Hills had a covering of snow this morning) much of the spring flora was struggling to come into flower. Among the flowers seen along the banks of the River Avon were a few Wood Anemones *Anemone nemorosa*, Barren Strawberry *Potentilla sterilis*, Golden Saxifrage *Chrysosplenium oppositifolium*, some Primroses *Primula vulgaris*, Daffodils *Narcissus pseudonarcissus* and a patch of Blue-eyed Mary *Omphalodes verna*. Grey Wagtails flitted down in the river, and a Dipper or two remained stationary long enough to give us a good view of this little bird with its startlingly white breast. A pair of Goosanders was also spotted downstream.

At one point our attention was drawn to an old tree with fronds of Polypody Fern dangling from its branches, in a way reminiscent of ferns in a tropical rain forest. On another old tree, the fungus *Stereum hirsutum* made an attractive display, its tiers of orange/grey caps contrasting with surrounding bright green moss covering the bark. Mosses were abundant on the rocky outcrops bordering the path through the gorge. Here we spent some time examining the large beds of Dog's Mercury *Mercurialis perennis*, for the

many male inflorescences exhibiting tiny protruding stamens, and the less common female inflorescences buried in the foliage at the tip of the stems. Leopardsbane *Doronicum pardalianches* was also prolific, the widespread arrays of young plants promising a colourful array in a few weeks time.

We proceeded fairly cautiously along the path to the newly constructed stairway leading to the aqueduct which carries the canal over the river. After following the canal for a short distance, we crossed to the other side and meandered through woodland towards a disused ash bing which has recently been acquired by the Country Park. Those who climbed up the bing managed to spot a Jay there. A brisk walk down to the river brought us back to the Visitor Centre, where the cafe had just closed, so we resorted to the remains of our thermos flasks for refreshments. We all agreed that Muiravonside would be well worth a visit later in the season.

Margaret Perry



THIS IS A BIT CONFUSING !
A helpful Muiravonside signpost

BADDINSGILL and WOLF'S CRAIG

Date April 29th
Leader Mike Jones

After a prolonged cool winter, reputed to have delayed Spring by several weeks, we were all delighted to arrive at the Community Woodland car park in strong sunshine with blue skies. Our leader, Michael Jones is well known to us all as a frequent guide on our excursions. Not only was he a Pentland Ranger for many years, but he owns the former North Esk reservoir and its surrounds, which he keeps as a nature reserve. This first-hand knowledge well equips him to take parties into these hills. We always enjoy his outings.

Swallows and House Martins swooped around us in breeding mood, as fourteen of us began the stroll from Baddinsgill uphill along the old drove road to the north. Soaring Buzzards were mobbed by Crows, and Peewits cried over the fields by the reservoir.

A few feral Greylags were the only wildfowl seen near the water. A herd of highland cattle grazed in a desultory fashion on the still-brown vegetation, whilst Skylarks sang from above and Blackbirds fluted in the Spruce plantations. On cue, as we passed from lush pasture into moorland, Red Grouse cried 'Go-back, go-back'. Undeterred we climbed towards West Cairn Hill where the rectangular strips differed in colour and texture depending on the stage reached in the muirburn cycle. Michael explained the purpose of the heather management pattern, including the novel use of a tractor-drawn flail to create a firebreak perimeter before each strip was burned. The botanists amongst us struggled to get excited about spring growth, but with even the Bog Cotton barely flowering, a few tussocks of ferns and patches of lichens had to stand in for the expected highlights, although there were some Cloudberry leaves.

Lunch was taken on the rocks of White Craig Hill with excellent views of all the surrounding hills, from Lammermuirs and Moorfoots in the east to Tweedsmuir and Lowther in the south. A modern addition to the prospect, both liked and loathed, was a scattering of wind farms around the compass.

George McDougall, now in his tenth decade, led the afternoon romp by example, through deep Heather and stony cleughs to the hidden gem of Wolf's Craig. The afternoon sun brought out many Viviparous Lizards warming themselves on old foliage of Heather and Bracken. A pair of Stonechats chatted on the flanks of Baddinsgill Burn; perhaps their numbers are on the increase once more. Peacock and Small Tortoiseshell Butterflies brought flashes of colour. Grey Wagtails apprehensively wagged their tails. A pile of Siskin feathers pre-empted the sight of a Peregrine pair high in the sky, and two Roe Deer and a dog Stoat all added to the enjoyment. The descent into Baddinsgill to the finish was noticeably greener as the sun continued to shine. Spring was surely coming.

Neville Crowther

A VIVIPAROUS LIZARD



Look for Patrick Adamson's lovely photo of this Lizard

AYR GORGE WOODLANDS

Date 6th May
Leader Joanie Fairlie

Joanie had found us a lovely new place for a visit. As always she had done her homework, recce-ing it on a bitterly cold day in the depth of winter, (compensated, she tells us, by a good meal in the local hostelry!), contacting the SWT Ranger for information about the reserve and obtaining a species list, to which we were able to add a few plants.

Ayr Gorge is a very attractive area, where the river flows through a sandstone gorge, thickly wooded on both sides. The SWT Woodland Reserve of 40 hectares lies on the west bank of the River Ayr at Failford. It is a designated SSSI because it is one of the finest examples of native woodlands in the west of Scotland.

Arrivals at the meeting place in Failford village were somewhat staggered! Those of us who travelled by the M8 were in good time and had no problem with parking. We were joined by one member who had slept overnight in his car, having spent the previous day searching out Hen Harriers; then by some who had successfully negotiated a twenty-mile detour on the cross-country route. More were expected, but after a short wait (longer than the normal Nats 10 minutes) we gave up on them.

Before starting on the walk we saw Spotted Flycatchers by the car park and Garden Warblers, Willow Warblers and Blackcap in and around bushes in a field which slopes down from the village road. Then we started off along the path beside the river, spotting among the woodland plants on the way Wood Horsetail *Equisetum sylvaticum* and its rarer relation Rough Horsetail or Dutch Rush *E. hyemale*. After some distance through the woods we reached a lovely lunch spot by the river. Here we were entertained by Grey Wagtails, flitting around on stones in the water. Among other birds recorded were Dipper, Heron, Tits including Long-tailed, Goldcrest, Treecreeper, Buzzard and Sparrowhawk.

After lunch the walk continued towards the Beech wood, but time did not allow us to explore all of the Reserve. And then the rain came, so it was back to Failford, and tea and coffee at the inn.

Lyn Blades

THE CROSS-COUNTRY ONES

Jean Murray and I arrived late, having opted for the direct cross-country route, and finding ourselves confronted with a badly signposted 20 mile diversion. The layby at Failford was full so we had to return to one a little up the road, and, finding an entry to the woodland where we had parked, we went in without giving it a thought.

We were in fact upstream of the 'official' woodland, and though the vegetation was largely similar we did see one or two different plants. Jean investigated a dank area in a small ravine beneath an overhang and found a common liverwort *Pellia epiphylla* and an interesting moss *Hookeria lucens*. This moss has large (5mm) translucent leaves and is uncommon though apparently 'not so rare as once thought'. Direct sunlight is lethal to it; the dark wet habitats it favours are perhaps uninviting to the average botanist! Out in the sunlight by the river we found a patch of Great Bittercress *Cardamine amara* and a good colony of Rough Horsetail *Equisetum hyemale*. This horsetail contains large amounts of silicon and bunches of it were once used as pot-scourers. It was once widespread but is now uncommon.

We had lunch by the river and were lucky enough to see a Sandpiper flying about on an island below. By now however we realised we were in the wrong place, so made our way down the road to the inn, where we were given Ayr Gorge pamphlets, and set off in pursuit of the rest of the party.



TOWNHALL CLOCK
Adoxa moschatellina

Everywhere there was a good supply of spring flowers including Dog's Mercury *Mercurialis perennis*, Wood Anemone *Anemone nemorosa*, Primrose *Primula vulgaris*, Wood Sorrel *Oxalis acetosella* and the dainty little Moschatel or Townhall Clock *Adoxa moschatellina* which has a tiny pale yellow flower on every face. Bluebells *Hyacinthoides non-scripta* were coming into flower, and so, in a heathy patch, was Blaeberry *Vaccinium myrtillus*. Patches of Ramsons or Wild Garlic *Allium ursinum* were well infected with the rust *Puccinia sessilis*, which later in the year attacks Reed Canary Grass *Phalaris arundinacea*.

We were delighted to find some Climbing Corydalis *Ceratocapnos claviculata*, a rather handsome chestnut-coloured slug, and a fallen log with no fewer than 7 common mosses growing on it - but we never did find the rest of the party. By the time we got back to the road their cars had gone, but we stayed on to have an excellent meal at the friendly little pub - and went home by the motorway.

Jackie Muscott

BOGHALL

Date 10th May
Leader Molly Woolgar

At Boghall, on the edge of the Pentlands, on a pleasant sunny evening, ten of us crossed the road from the farm to walk along a hedge-lined track. Yellowhammer flew ahead of us and then circled back, presumably having seen us out of their nesting territory.

In an area of scrub and trees at the furthest point of our walk, a Chiffchaff was singing from high up in a conifer, while Willow Warblers were not so visible, singing at a low level. Blackcap showed occasionally in the ivy, and Long-tailed Tits flew past, calling all the while.

Our walk returned by a small burn coming down from the Pentland Hills, while Swallows flew low over adjoining fields.

Molly Woolgar

UNION CANAL TO LINLITHGOW BRIDGE

Date 13rd May
Leader Jackie Muscott

Botanising along the canal last year I was intrigued to find a new path leading off towards Linlithgow; on investigation it turned out to run alongside the River Avon to some rather attractive ponds. Since I had also discovered a largish car park tucked away between the A706 and the canal just a few hundred yards away, it seemed an ideal venue for a Natural History Society outing.

On the day the weather did us proud, and a party of about a dozen Nats enjoyed a leisurely walk and a lazy lunch in sunshine by the ponds. The car park is beside what I wrongly described as an old mill (now used by sea cadets); George McDougall put me right - it was apparently a stable used by the canal horses. One tends to forget that the canal boats were originally horse-drawn, but Neville Crowther pointed out the 'kicking stones' - small boulders closely spaced between the towpath and canal to prevent horses veering off into the water at night. They're still there, half buried under the canal vegetation. Last year someone pointed out to me a small paddock, now part of a larger field near Fawnsparck where canal horses were once put out to graze.

Despite the late start, the spring flowers had more or less caught up on last year, and both Cherry *Prunus avium* and Bird Cherry *Prunus padus* were in flower. There was a plant of the latter in the car park, some of whose flowers had been infected by a fungus *Taphrina padi* which causes a gall, a type of 'pocket cherry' in place of the normal fruit. Further along we saw an Ash tree *Fraxinus excelsior* whose last year's flowers had

also been galled, this time by a mite *Aceria fraxinivorus*. The mite lays its eggs into the flowers, producing a hard woody growth which may remain on the tree for several years.

There were a great many Alder Flies *Sialis lutaria* flying by the canal or perched on the leaves of the Reed Sweet Grass *Glyceria maxima*, where they were laying batches of eggs, the larvae being aquatic. As is often the case, some of the *Glyceria* was infected by a smut, *Ustilago longissima*, which produces stripes of black spores along the blade and weakens the plant. Wood Avens *Geum urbanum*, Water Avens *Geum rivale* and their beautifully intermediate hybrid *Geum x intermedium* were all in flower along the canal, but perhaps the most interesting plant was Frogbit *Hydrocharis morsus-ranae* introduced from the Forth-Clyde Canal since the two canals were rejoined in the year 2000. Wrens and Willow Warblers were singing alongside the canal, Swallows picking insects off the water and Swifts flying overhead.

As we turned off to take the path to Linlithgow Bridge, we noted a patch of the uncommon woodland plant Goldilocks Buttercup *Ranunculus auricomus* on the bank, and then we were in or beside woodland. There were attractive patches of most of the woodland flowers: Dog's Mercury *Mercurialis perennis*; Wood Anemones *Anemone nemorosa*, some a deep pink; Bluebells *Hyacinthoides non-scripta*; Wood Sorrel *Oxalis acetosella*; Wood Speedwell *Veronica montana*; Violets *Viola riviniana* etc., with Leopardsbane *Doronicum pardalianches* just coming into flower. We passed a couple of Badger holes on steep banks, and had good sightings of Pied and Grey Wagtails nearer the river.



GOLDILOCKS BUTTERCUP
Ranunculus auricomus
Note strap-like stem leaves
and rounded basal leaves

We had lunch by the ponds among Orange Tip Butterflies, which were visiting the Lady's Smocks *Cardamine pratensis* on which their caterpillars feed. The birds on the water were the common ones: Coots,

Moorhens, Mallards (we saw ducklings later), Tufties, a pair of Swans at nest, and a solitary Wigeon. But the pond was full of tadpoles, and some of the party spotted an immature Azure Damselfly *Coenagrion puella*, while others noted some 7-spot Ladybirds which seemed to have spent the winter holed up in a plastic tree-tube.

On the way back some members of the party carried on to the aqueduct over the Avon, while others went down to the riverside below. It's an interesting area, one of the few places where you can be guaranteed to find the rust *Melampsora populnea* on Dog's Mercury, perhaps because Grey Poplar *Populus x canadensis* is also there in abundance. Poplars are necessary for this rust to complete its life-cycle. As we approached the area we heard children's voices, and found a group of the young sea cadets we had seen arriving that morning being lined up against one of the arches of the viaduct - merely to be counted, not shot, we were assured by their harassed leader. Starlings had taken advantage of small holes in the viaduct for their nests, and as we left we watched them carrying food to their young.

Jackie Muscott

THE BIG WOOD

Date 20th May
Leader Lesley Fairweather

The weather was not auspicious but 12 of us set off along the Fountain Hall avenue of mature trees listening out for any birds brave enough to sing on this wet, cold morning. The song of the Mistle Thrush was debated and unanimously agreed, before Sue Crowther spotted it at the top of a distant tree - a good beginning. A Greater Spotted Woodpecker's nest was located, but after both parents were seen giving loud chinks of disapproval, the watching group moved on so as not to interrupt the feeding process. The Ormiston Big Wood was owned by the Forestry Commission but was sold to a group of neighbours in 1990, and now a lot of the Sitka has been felled and Scottish native trees planted, including a thousand Oaks. Beech, Sycamore, Birch and various conifers of mixed ages make up the rest of the wood. Walking through, the harsh sound of a Jay was heard, as well as the high-pitched Goldcrest call. The Willow Warblers were easy to identify but the Garden Warbler, notoriously similar to a Blackcap, took longer until Mary Tebble assured us that the deep fruity hurried song was indeed a Garden Warbler. At the side of the wood, by a field of cattle, Swallows and Sand Martins in large numbers, were flying, calling and feeding. Dunnocks, Yellowhammers and the all too common Pheasant kept the group going until the bus shelter at Wolfstar farm gave a couple of minutes relief from the steady rain.

Reaching the Ormiston/Pencaitland railway walk, the main search was for a Whitethroat, but it lay low initially, allowing a Skylark to take centre stage with both flight and song. A close view of Long-tailed

Tits feeding young in the hedge was followed by the sought-after Whitethroat. Partridges, Hares and yet more Pheasants kept the interest going until a short-cut allowed the return to Hoolets Yett and a belated picnic lunch in front of a 'roaring' fire. With flames as well as smoke coming from the chimney there was talk of what kind of nest was alight - the general conclusion was Jackdaw with the hope that no-one was at home! The garden feeders gave continuing bird interest, with the local Tree Sparrow giving an excellent sighting to many and making the outing for Joanie Fairlie.

The satisfaction of seeing 40 species of birds more than made up for the general discomforts of a wet May morning.

Lesley Fairweather

DAWYCK BOTANIC GARDEN

Date 27th May
Leader Jean Murray

Dawyck is still a fairly young garden, having been gifted to the nation by Colonel Alistair Balfour as recently as 1978, to become part of the Royal Botanic Garden Edinburgh. It slopes up quite steeply on both banks of the Scrape Burn, rising to 250 metres, thus making it particularly suitable for hardy plants from cooler drier areas of the world.

As well as just wandering round enjoying all that the garden has to offer, 3 separate trails can be followed, one of which is the Scottish Rare Plant Trail, the main one chosen for the day. There are 17 plants to be found along the way and unless you have been a dedicated hill walker you are unlikely to have seen many of them in the wild. Looking at the leaflet this seemed a good time of year to find them easily, and see some flowering.

The intention was to go round the David Douglas Tree Trail in the afternoon but some of the specimens are so stunning that we stopped on our morning walk to read about their history; they were planted by a previous owner by the name of John Murray Naesmith, who had a passion for trees which led him to subscribe to the fashionable plant hunting expeditions of the day. One very special Douglas Fir, now 170 years old, is said to have come to Scotland as a seed from a cone sent back by David Douglas himself.

Early on, the weather was kind. When we reached the first bridge we had a good view of a pair of Grey Wagtails; it looked as if they had a nest above the waterfall. A Green Woodpecker, Willow Warblers and Mistle and Song Thrushes were heard. We were successfully following the trail and had seen Globeflower *Trollius europaeus* and Woolly Willow *Salix lanata* in flower, had identified others by their leaves and were heading for the upper garden. We sidetracked to look at a string of Buddhist prayer flags left by a team who come over from time to time to assist with the layout of a new Nepalese area.

Another bridge crosses the burn at a deep pool and we were lucky enough to see a young Dipper just sitting on the far side. Now we had reached the Twinflower *Linnaea borealis*, showing only leaves, and the Blue Heath *Phillodoce caerulea* already gone over, but which had flowered well.

Then it was lunch and the rain came on! It didn't look hopeful so we completed the trail and abandoned the outing. Jackie and I hung on and went round the Tree Trail in improving weather and rounded off the day by stopping off in Peebles. Walking across the road bridge Jackie spotted a Dipper repeatedly diving and resurfacing in the manner of a diving duck. It seemed unusual behaviour.

Jean Murray

ST ABBS HEAD

<u>Date</u>	3rd June
<u>Leader</u>	Grace Jamieson

On a perfect summer day, sunny with blue skies and cooled by a welcoming slight breeze, 18 members of the Nats set off from the NTS car park and meandered along St Abbs coastal path. First stop overlooked a cliff top bay where there was an abundance of Guillemots, Razorbills and Cormorants.

From here we explored along the path edges and were delighted to see a Small Copper Butterfly on Thrift. As we ambled along, botanising in various nooks and crannies, we were treated to the most melodious of songs by a Skylark nearby. The song was so nice I had to stop and sit down to give the Skylark my full attention and sheer admiration for such a wonderful performance. After tearing myself away I caught up with the others at the next bay. They were debating intensely as to whether the Fulmar, which was discreetly tucked away in its craggy domain, had departed this life, or was simply asleep. After much ado the Fulmar very kindly answered the big question as it woke up and unfurled itself. All around the Fulmar, perched in crevices, were Razorbills and Shags.

As we continued our way round the corner of the bay we were greeted by the familiar call of the many Kittiwakes busily flying around. In the distance out to sea were flocks of Gannets flying by, in an orderly fashion. Along the path edge we were able to see Birds'-foot Trefoil *Lotus corniculatus*, Sea Campion *Silene uniflora* and Purple Milkvetch, *Astragalus danicus* which is now considered to be a plant at risk, as it is becoming rare in England. Flying all around us also enjoying a lovely sunny day was the St Mark's fly – distinctive by its gangly legs in flight. It is fabled that the fly was given this name because it was supposed to come out on St Mark's day.

Lunch was enjoyed in another lovely bay where we watched a Crow trying to have a go at a Guillemot, but the Guillemot was having none of it and fended off its attacker. A real treat at the top of the hill was to see a Small Elephant Hawkmoth warming itself in the sun - it looked as if it had just hatched.

The afternoon walk continued round the cliff top path, where an expedition of intrepid explorers went up a hillside in search of the Common Rock-rose *Helianthemum nummularium* and found plenty. At the crossroads some people went off by the pond to

take a short cut back to the car park; others trekked up to the lighthouse and back. Our final meander round by the loch gave us the opportunity to watch the antics of a Kestrel on the telephone wire, swooping down to the ground and back on the wire.

Throughout the day lots of Seven-spot Ladybirds were seen, and several Green-veined White Butterflies and Small Coppers were spotted. Among the plants we saw Thrift, *Armeria maritima*, some with white flowers; purple Northern Marsh Orchid *Dactylorhiza purpurella*, Dove's-foot Cranesbill *Geranium molle*, Early Forget-me-nots *Myosotis ramosissima* and very tiny blue flowers of Wall Speedwell *Veronica arvensis* growing through Thyme *Thymus polytrichus*. Some Thyme found growing by rocks was affected by a gall, caused by an aphid, which distorts the flower.

Other birds seen were Sparrow, Swallow, Rock Pipit, Meadow Pipit, Pied Wagtail, Mute Swan and Puffin.

This enjoyable excursion was completed with a welcome stop at the café for afternoon tea and a chat.
Grace Jamieson

HARLAW

<u>Date</u>	7th June
<u>Leader</u>	Margaret Perry

Twelve Nats took advantage of the good weather to enjoy an evening walk in the Pentlands. Starting from the car park at Harlaw we made our way along the end of the reservoir and over the hill to the Black Springs. In the grass by the edge of Threipmuir the line of iron bollards, marked EWCo 1848 (Edinburgh Water Company) indicate where the springs are located.

At the side of the path, a variety of trees, native and otherwise, have been planted. One noticeable feature was the amount of leaf curl on the Cherries. On investigation we found masses of small green caterpillars inside. The star sighting in this area was a Brimstone Moth which was pursued and duly recorded by at least two photographers.

As we started along the path by the edge of Threipmuir we had an interesting encounter. A cloud of small flies is not an unusual sight, but to land in the middle of a Mayfly hatch is a bit different.

The Mayflies we met were small ones with three long tail filaments, probably of the genus *Caenis*. As classification depends primarily on the wing venation, and the veins are often very faint, it is impossible to identify individuals in the field; suitable lighting and a good lens or microscope are required. The flies seemed particularly attracted to a yellow shirt, which became covered in small flecks of skin as the insects landed and had their final moult before becoming mature adults.

Lyn Blades

LAKE OF MENTEITH

Date 10th June
Leader Lynn Youngs

Thirteen members assembled in the car park on a warm, sunny day to wait for the small ferry which was to transport them across the Lake of Menteith to Inchmahome Island and Priory. Thankfully there was just enough of a breeze to keep the dreaded midge at bay, and this continued throughout the day.

Two ferries were in operation, which kept the waiting to a minimum, and with the crossing time of 7 minutes we were all quickly transported to the Island which was designated a Site of Special Scientific Interest a number of years ago. Whilst waiting we saw Common Blue Damselfly and an assortment of birds including Heron, House Martin, Swallow, Mute Swan, Pied Wagtail and Chaffinch. This was a good start and the hoped-for Osprey soon put in an appearance just as the first ferry carrying our group left the Pier. We all got excellent views of this magnificent bird of prey as it flew very close to the north of the Lake, and lingered for a number of minutes before finally disappearing from view.

After landing we queued for our entrance tickets whilst enjoying the view of a female Mallard and six chicks basking in the sunshine practically under our feet. This family group was so camouflaged that, despite their proximity, they had to be pointed out so that everyone could see them.

The day was spent criss-crossing the paths that exist on the Island and a number of loops were completed in different directions, each path producing different sightings. Among the birds we noted Reed Bunting, Great Crested Grebe, Treecreeper, Oystercatcher and Wrens were everywhere. Blackcap was heard a number of times before a female finally put in an appearance during the late afternoon.

Insects included Buff-tailed Bumblebee; Green Lacewing, one heavily marked with black; Green-veined White Butterfly; and Silver Y Moth; and there were Alder Galls caused by Mites.

We enjoyed our lunch in a grassy clearing close to the Priory in glorious sunshine, overlooked by a very interesting Cut-leaved Beech. This variety is of interest botanically as the plant has inner tissues of

ordinary Beech overlaid by tissues of the Cut-leaved form. The entire Island contains a wealth of fine trees dominated by mature Sessile Oak, Ash and Sycamore. Box, Hazel, Alder, Birch, Whitebeam, Copper Beech and Willow are also present, and there is a very special avenue of ancient Sweet Chestnuts that are designated under Scotland's Heritage Trees. Judging by the magnificence and immense size of the contorted barks and branches this was a justified choice.

We found a rich flora on the Island: Climbing Corydalis *Ceratocarpus claviculata*, Greater Stitchwort *Stellaria holostea*, Bluebell *Hyacinthoides non-scripta*, Lesser Spearwort *Rununculus flammula*, Changing Forget-me-not *Myosotis discolor*, Three-nerved Sandwort *Moehringia trinervia* and Marsh Marigold *Caltha palustris*, to name just a few. The everlasting memory, however, was the sight of the walls of the 13th Century Priory covered in the beautiful pink of the Fairy Foxglove *Erinus alpinus* in full flower. A wonderful sight, enhanced by the glorious sunshine.

It was with heavy hearts that we joined the short queue for the ferry back to our waiting cars, but I for one would recommend a repeat visit in the not too distant future.

Lynn Youngs

THE ANTLERED CHESTNUT

Of the many fine trees on the island, the three veteran Sweet Chestnuts *Castanea sativa* steal the show in terms of antiquity and character. These heavily gnarled individuals are probably more than 400 years old. Although extensively decayed and hollow, they are still very much alive, and are the island's oldest living residents.

The largest of the three is known as the Antlered Chestnut, as its stag-headed branches resemble the antlers of a deer.



HUMBIE WOOD

Leader George McDougall
Date 24th June

The narrow road leading to Humbie Church runs between old walls overshadowed by trees, a pleasant beginning to the outing. The meeting place was a small car park near the bridge over the Humbie Water. Pendulous Sedge *Carex pendula* was growing near the bridge and Monkey Flower *Mimulus guttatus* agg. beside the river. George had received permission for our walk through Humbie Wood from the owner, Miss Bayne-Jardine.

Crossing the bridge we set off up the path to the wood, here finding the Wood Speedwell *Veronica montana* and Shining Cranesbill *Geranium lucidum*. The bridge itself is well above the river but the path climbed even higher before reaching the wood. This was a lovely wood to walk through, filled with birdsong and with a path dappled with sunlight. In a bright patch the Cut-leaved Cranesbill *Geranium dissectum* was growing. Lunch was taken at a comfortable spot, where trees obligingly supplied us with back rests and where George gave us luscious strawberries. What an excellent leader he is! The path followed the edge of the trees and here the Remote Sedge *Carex remota* was found. Soon we were deep in the wood again, passing a large patch of Wood Vetch *Vicia sylvatica*, but sadly the beautiful flowers were still in bud. The path dropped down to the river and then climbed up back to the bridge.



Out in the open, we walked up the old road where we had the entertaining sight, one we always enjoy, of Eunice catching a moth with her meat safe - in this case a Silver Y. We saw some Orange Tip Butterflies and a Small Copper. The Oak Mazegill Fungus *Daedalea quercina* and a St. George's Mushroom *Calocybe* (formerly *Tricholoma*) *gambosa* were found. We then spent some time in the beautifully kept graveyard round Humbie Kirk examining the old stones and relaxing on the benches. When George was

preparing this walk he met David and Frances Cottrell who have a house above the bridge, and they suggested that we all came to their garden for tea and coffee. So we finished the day not only drinking tea and coffee but also sampling a delicious cake, specially iced for us. I should like to repeat our thanks for such a kind and thoughtful invitation, a perfect ending to a happy day.

Margaret White

CORSTORPHINE HILL

Date 28th June
Leader Stephan Helfer

Everything seemed right for a successful microfungi foray on the evening of 28th June – an expert leader, beautiful weather, a small number of enthusiastic participants, an attractive venue. However, something was missing and that was a plentiful supply of different microfungi! We found many splendid specimens of the orange-coloured Nettle rust *Puccinia urticata* distorting the leaves and stems of Stinging nettle *Urtica dioica* but other microfungi were few and far between. In fact, some of those we did find could be seen in our back gardens: Rose rust *Phragmidium mucronatum*; Black spot of roses *Diplocarpon rosae*; the brown felty American Gooseberry Mildew *Sphaerotheca mors-uvae*; and Bramble rust *Phragmidium violaceum*, violet spots on Bramble leaves. Our leader pointed out several Powdery Mildews on leaves including those on Sycamore *Uncinula bicornis* and young Oak *Erysiphe alphitoides*.⁴⁵

However, the dearth of microfungi was partly compensated for by a spectacular display of the white Pale Oyster Fungus *Pleurotus pulmonarius* on a big Beech log which was host also to a number of other macrofungi. At the top of the hill, also on wood, we found two Slime Moulds (or *Myxomycetes*), the startling yellow *Fuligo septica* and the silvery Bark Puffball *Enteridium lycoperdon*.

Mary Clarkson

HELL'S CLEUGH

Date 1st July
Leader Michael Braithwaite

A party of 10 enjoyed a hill walk to the back of Hardens Hill near Duns, where there is a series of cleughs in the Old Red Sandstone conglomerate.

Everyone walked happily up the hill at the start, enjoying the view, the Butterflies, the Grasshoppers and a Lizard while leaving the leader standing by two old bushes of Dwarf Cherry *Prunus cerasus* which they were called back to puzzle over. It is a remarkably late-flowering species but the last flower had just dropped. A wind farm is being developed on the hill top and a quarry has been dug for material for the bases

of the towers, but these we left to one side. Across the march fence the moorland is grazed by cattle and sheep, with happy results for the flora, and we saw an abundance of Crowberry *Empetrum nigrum*. One of our number found an anomalous Rush which had the rough ridges of Compact Rush *Juncus conglomeratus* and the many ridges of Soft Rush *J. effusus*; this was determined as the hybrid *J. x kern-reichgeltii*. Working down the slope we came to the first of a series of flushes with Tawny Sedge *Carex hostiana*, Dioecious Sedge *C. dioica* and Marsh Valerian *Valeriana dioica*. Below this, the slope drops into the gully of the cleugh with extraordinarily extensive flushed areas with a stony substratum made possible by the very loose structure of the conglomerate through which water can percolate at will. Here Butterwort *Pinguicula vulgaris* was very plentiful, with Grass-of-Parnassus *Parnassia palustris*, Scottish Eyebright *Euphrasia scottica* and Lesser Clubmoss *Selaginella selaginoides*. Damselflies were frequent. Surprisingly Bog Asphodel *Narthecium ossifragum* was found at the top of one flush, just below a *Sphagnum* cushion where the water was more acid.

After lunch we went a little way into the recesses of Hell's Cleugh where the conglomerate has eroded into a very deep gully with unstable cliffs, with New Zealand Willowherb *Epilobium brunescens*. Proceeding towards White Burn, Bristle Club-rush *Isolepis setacea* was seen and good quantities of Lemon-scented Fern *Oreopteris limbosperma*, before a stand of Smooth-stalked Sedge *Carex laevigata* was found by the burn itself. This is very scarce in Berwickshire and the record is a valuable one. Butterwort remained remarkably plentiful. It had turned hot and the climb back up the hill and over to the cars was a bit of an effort for all of us.

Michael Braithwaite

MILKHALL POND

<u>Date</u>	July 5th
<u>Leader</u>	Neville Crowther

On a cool and breezy evening 8 members were present for the tour of this small nature reserve near Leadburn. Milkhall Pond had been bought by the Scottish Wildlife Trust in 1976 with a further small addition in 1979. Unusually, this reserve is an entirely man-made series of habitats. The dominant feature is the pond, originally built alongside the Penicuik to Peebles railway line in 1854, as a source of reliable spring-fed clean water for the Valleyfield paper mill in Penicuik. The pond was impounded by a clay core embankment and the levels controlled by sluices leading to the newly canalised Lead Burn alongside. It was last used commercially in 1928. It was the open water habitat that was the main attraction for the local SWT branch who instigated its purchase. It remains the focus of management, for its invertebrates, amphibians, aquatic plants and birds. The main pond is 0.7 hectares in area and is 1 - 1.6 metres deep. The original surrounding rough grassland including part of a tree belt, occupies

1.3 hectares. Much of this has now been planted with native trees, or excavated to give a series of new ponds. Additionally, a mixed plantation of 0.4 hectares to the NE, known as Fairbairn's Wood is managed for conservation with the agreement of the local farmer.

As we walked along the edge of the pond, Dabchicks whinnied and two Herons flew reluctantly away from gorging on Sticklebacks. Three territorial Sedge Warblers made their presence heard in the banks of Reed Canary Grass *Phalaris arundinacea* and a pair of Buzzards, as always nesting in the tree belt, mewed overhead. At this time of year there are large hatches of China Mark Moths *Nymphula nymphaeata*, and many were seen egg laying on Broad-leaved Pondweed *Potamogeton natans* leaves. A rapid bit of pond-dipping produced their distinctive oval larval cases cut from the Pondweed leaves. Other notable larger invertebrates netted included Red-eyed Backswimmers *Notonecta glauca*, nymphs of the Common Darter Dragonfly *Sympetrum striolatum* and the Damselflies: Large Red *Pyrrhosoma nymphula*, Emerald *Lestes sponsa* and Common Blue *Enallagma cyathigerum*; and one adult Great Diving Beetle *Dytiscus marginalis*. A 'newtpole', of the Smooth Newt *Triturus vulgaris* with external gills was a welcome sight. Thousands of frog and toad larvae were present preparing for emergence. The locally-scarce Wood Club-rush *Scirpus sylvaticus* was coming into flower. Green leaf beetles *Gastrophysa viridula* in all stages of the life cycle were festooning the filigreed leaves of the Dockens. The Ringlets and Meadow Browns fluttered up from the tall grasses as we walked by. They had become more common by July than the Orange Tips and Green-veined Whites, so frequent a month before. Additionally the common Moths Silver Y *Autographa gamma*, Silver-ground Carpet *Xanthorhoe montanata*, Latticed Heath *Semiothisa clathrata* and Yellow Shell *Camptogramma bilineata* all presaged what was to be a 'summer of the insect'.

The flower-rich mesotrophic grassland of the former railway, its embankments and cutting, abounded with Knapweed *Centaurea nigra*, tall umbellifers - Wild Angelica *Angelica sylvestris* and Hogweed *Heracleum sphondylium*; and the Nettles and Thistles all beloved of nectaring insects. As we wandered back through the Oaks and Birches, skirting the smaller ponds, additional colour was given to the fading day by the yellow of Lady's Bedstraw *Galium verum*, and Bird's-foot Trefoil *Lotus corniculatus*, and the purple and blue hues of Comfrey *Symphytum x uplandicum* and Bugle *Ajuga reptans*. We made our departure to the suggestion that we return soon for the express purpose of pond dipping ... 'you are never too old.....'

Neville Crowther

NOTE

Elizabeth suggests that Fairbairn's Wood is named after Dr. Fairbairn who was an active member of the Nats..

HOLY ISLE, LINDISFARNE

Date July 8th
Leader Neville Crowther

The coach journey was made in good time on a cool and windy morning. We picked Mary Tebble up at Dunglass and an hour later crossed the causeway towards the Holy Island skyline as the tide advanced, soon to be 'marooned' for the day. We were easily found by additional members coming by car, and by 11 am the caravan of 33 members trooped off to enter the National Nature Reserve just as the sun emerged to brighten proceedings.

It was slow progress initially, such were the diversions. The invasive Pirri-pirri-bur *Acaena novae-zelandiae* (from guess where?) scrambled across the ground, still mostly in flower. However enough of the chestnut brown fruiting heads sticking to socks and jumpers indicated the potency of its dispersal powers. The first of many Butterflies - Dark Green Fritillaries, Meadow Browns and Ringlets - were seen as were tiger-striped Cinnabar Moth caterpillars bunched around the Ragwort heads, their colour a warning to all avian predators that they too contained the poisons absorbed from their food plant. Barely separable, Six-spot and Narrow-bordered Five-spot Burnet Moths in bottle green and scarlet, nectared on the Viper's Bugloss *Echium vulgare*. Only by examining the images on her digital camera was Joanie able to demonstrate the difference for us. As we came to the first interdune slacks the Grass-of-Parnassus *Parnassia palustris* was just coming into flower and the first Orchids were identified. The pink of the Early Marsh Orchid *Dactylorhiza incarnata* and the carmine of the Northern Marsh Orchid *Dactylorhiza purpurella* contrasted strongly, as did the purple and yellow colour variants of Quaking Grass *Briza media*. Cinquefoils with long runners, Silverweed *Potentilla anserina* and Creeping Cinquefoil *Potentilla reptans*, were distinguished mainly by their foliage. Almost overlooked were the tiny blooms of Brookweed *Samolus valerandi* sharing the damper patches with Marsh Pennywort *Hydrocotyle vulgaris*. The Creeping Willow *Salix repens* formed large circular mats, up to 5 metres across and perhaps 40 centimetres high, on the floor of the slacks. Many leaves had the red swellings of the Sawfly *Pontania collactanea*.

Struggling somewhat over the yellow dunes with their blanket of flowering Marram *Ammophila arenaria* we eventually dropped down towards the beach where the embryo dunes boasted pioneers such as Frosted Orache *Atriplex laciniata* and Sand Couch *Elytrigia juncea* with the halophytes Prickly Saltwort *Salsola kali* and Sea Rocket *Cakile maritima* amongst the jetsam.

By this time, as they were feeling fit and adventurous we had a breakaway group of three, Roger, Jackie and Mary, determined to find the rare narrow-lipped Helleborine previously known as *Epipactis leptochila*, and now recognised as a separate species the

Lindisfarne Helleborine *E. sancta*. (Jane Squirrell's article Page 21.) At the Snook they were successful, and were also rewarded by finding two other unusual species, Lesser Water Plantain *Baldellia ranunculoides* and Bog Pimpernel *Anagallis tenella*.

The main party had ventured down to the edge of the sea, but sea birds were not numerous, and after examining some fossiliferous limestone with an abundance of crinoids, we sought a lunch place in the shelter of the dunes. Here we found several moths. Half a dozen Garden Tigers, photogenically posed with milk-chocolate and cream forewings and glimpses, petticoat like, of orange red underwings. Also, known to us all from childhood, were several of their 'woolly bear' caterpillars in black and chestnut. A few Large Yellow Underwings either scampered cockroach-like or took wing, to buzz away into the shrubs. Yellow Shells must have had a recent hatch and fluttered in the taller vegetation.

We had been seeing Meadow Pipits and Skylarks attending to their nesting duties most of the day, but now we began to see one or two Stonechat families and a few Wheatears. The dry grassland which we crossed on our circuit back to the farmed part of the island had a few botanical delicacies for us. Not only were there Twayblade *Neottia* (formerly *Listera*) *cordata* and Common Spotted Orchid *Dactylorhiza fuchsii* in good numbers, but Marsh Helleborine *Epipactis palustris* spikes numbered in their thousands in two areas; a breath-taking spectacle of what is perhaps our most exquisite Orchid. Eagle-eyed Jean was able to show me Flat Sedge *Blysmus compressus*, here at its northern limit. The grey-green hairy foliage of Hound's Tongue *Cynoglossum officinale* almost escaped our attention too. It also is a southern species, now in decline.

We reached the lough for a welcome sit-down in the bird-hide. Rewarded by good views of Reed Bunting, Coot, Moorhen, Dabchick and Mallard, we were surprised by two drake Ruddy Ducks with distinctive white faces, blue beaks and cocked tails. A new bird to many of the group, their imminent demise as a European breeder stimulated agitated discussion. A delight - Swallows were nesting in the hide and perched a few feet away on the *Typha* spikes before darting in to feed the chicks. Aquatic plants of note around the lough were Amphibious Bistort *Persicaria amphibia*, Great Willowherb *Epilobium hirsutum*, Bog Bean *Menyanthes trifoliata* and Water Plantain *Alisma plantago-aquatica*.

With an hour to spare before the coach was due to leave we dispersed, some to watch sea birds such as Cormorants, Sandwich Terns, Eider, and the early returning waders Dunlin and Turnstone; others to scan the Farnes kindling plans for next year; some visited Gertrude Jeckell's garden; some sought the harbour and the priory; other were misled by my enthusiasm, to search in vain for crab sandwiches, and had to settle for cups of tea. At 4 pm the causeway was again drying and we could reluctantly leave.

Neville Crowther

SEACLIFF

Date
Leader

July 15th
Neville Crowther



Arriving shortly before 10 am with the temperature a bearable 24° C, we were for a short time, alone with the beach, the Bass and the Boat. It would not stay that way for long; by mid afternoon it resembled Blackpool and the car park was full. For the moment however we had nature and the beach to ourselves. Sandwich Terns flew overhead screeching, adults carrying Sand Eels for their juveniles. The Bass Rock resembled a snow storm through the binoculars, as swarms of Gannets swirled around their incubating and brooding partners. Shags stood sentinel out at St Baldred's Boat, rehearsing for 'Flannan Isle'. Eider ducks bobbed around the islets with small creches of black ducklings.

We, eighteen strong, commandeered a prominent rock for our belongings and, equipped for the rock pools with nets and buckets, began our foray. Jean Gilchrist, who was unable to lead the excursion, had reconnoitered well and provided us with copious notes and ID sheets for the day. After an hour or so the tide was at its lowest and we splashed around in the kelp beds of the sub-littoral capturing wriggling Snake Pipe Fish, Black Gobies, slippery Butterfish and several small Plaice. The rocks beneath the kelp were painted bright pink by the encrusting red seaweeds with tufts of delicately varied foliose reds. Edible Crabs 'prayed' as we picked them up: Fiddler Crabs showed their electric blue trim : Hermit Crabs scurried hither and thither in the rock pools. The suckers of Sea Urchins and Starfish stuck to our fingers, and Chitons and Limpets stuck to the rocks. Under overhangs and beneath rocks Bread Crumb Sponges, writhing Brittle Stars in black or red, Whelk eggs and Anemones were present to surprise. By lunch time most of us were damper than before, some considerably so! Our trays of exhibits attracted the interest of many children from 6 to reborn 60.

An afternoon walk was called for, so we followed the arc of Seacliff bay around to the west. Fulmars by the score were nesting on the cliffs of the Gegan, along with about six pairs of House Martins, using the rock faces in the time-honoured fashion. The Gegan is said to be the smallest harbour in Britain. It was carved from the red sandstone in 1890 using compressed air-powered saws driven by a steam engine. We followed the cliffs to the west, to beneath Tantallon Castle, the coastal erosion features of stacks and gullies plus wet seaweed proving at times difficult to negotiate. Nevertheless we were rewarded by being able to observe many characteristic plants of the maritime cliff grassland: Kidney Vetch *Anthyllis vulneraria*, Purple Milk Vetch *Astragalus danicus*, Trefoils, Burnet Saxifrage *Pimpinella saxifraga*, Scurvy Grass *Cochlearia officinalis* and naturalised Wallflowers *Erysimum cheiri*, plus drifts of the large leaves of Winter Heliotrope *Petasites fragrans* on the earthier slopes. By late afternoon as we turned for home the temperature was still around 30 degrees and we lazily strolled past the splashing children and dogs back to our cars.

Neville Crowther

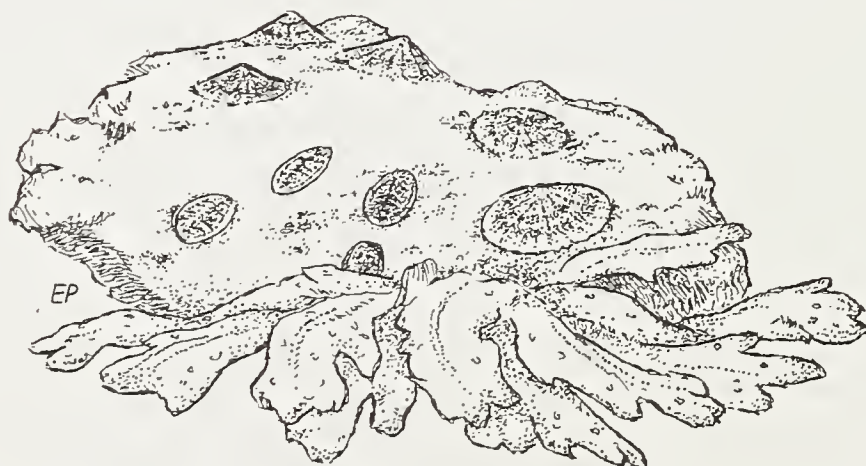
BOGHALL

Date
Leader

19th July
Janet Watson

On a fine evening Janet took us to new ground close to the Pentlands, small woodland, grassy places, and good tracks between fields. We found a fair collection as we meandered. Close to the lay-by where we parked we were eating lovely ripe cherries. Early on the walk a large nest was spotted in the trees, unidentified and unoccupied.

My jottings consisted of the following; other members would have many more: Rosebay Willowherb, Common Spotted Orchid, Meadow Vetchling, Guelder Rose, Ragwort, Creeping Thistle, Russian Comfrey, Common Hemp Nettle, Coddilins and Cream (Great Willowherb), Elder in flower. We saw Butterflies: Small Tortoiseshell, Meadow Brown, Ringlet; and Soldier Beetles on Ragwort.



CHITONS AND LIMPETS: MANY SEaweeds.

As we were walking back, the party a bit scattered, we realised that three men were missing. To the right of the track there was a drumming noise and from the field, over a fence and a ditch came the men as about forty young stirks came rushing down. The fence was lined with the black and white heads of the curious beasts, and others clambering onto the front row to stare at us. As Tom said, they (the stirks) wouldn't have seen anyone for days. Yes, we were laughing!

On to the lay-by, and after another go at the cherries, we thanked Janet for a lovely walk and made our way home.
Dorothy Stuart

THE MELDONS

Date 22nd July
Leaders Eric and Eileen Perry

Eric and Eileen's walks are always among the best: lovely places - this time the Meldons; lovely views over Peebles and the Broughton Heights; great company; and, of course, anticipation of tea on the lawn at Kilcreggan to finish off. This year's walk lived up to all expectations.

We started off at the convenient conveniences at the foot of Black Meldon, to be met with the sight of an amazingly messy group of campers beside the burn. 'Not how we were taught to camp in the old days'! Feeling superior, we set off on a gentle amble along a track, being entertained all the way by lots of Butterflies - Small Heath, Blue, Ringlet and Meadow Browns, keeping photographers busy.

Before long we came to a lovely little reservoir, usually frequented by anglers, but today left to Damselflies and Nats. A lovely spot for a good rummage around and a quiet sit for lunch, seat provided, disturbed only by a few noisy Oystercatchers overhead. We found galls on Sneezewort *Achillea ptarmica*; a stray Cornflower; a pair of Swans; Large Red, Common Blue and Blue-tailed Damselflies; and a Stickleback defending its territory in the pond.

Reluctantly we moved off eventually and completed a circle, stopping off at another pond and still more Damselflies, lots of Common Blues mating and laying as we watched. We found a Common Hawker, on its last legs (or wings?) among the tall grasses. Because it was in such a bad way it allowed us to photograph it, before it finally expired. We found a fine colony of Stag's-Horn Clubmoss *Lycopodium clavatum* along the path, not very common in the Borders, and a small patch of the even rarer Alpine Clubmoss *Diphasiastrum alpinum*.

It was a very hot day and we were glad to reach the cars again, but before we headed for Kilcreggan we sought out the Wood Bitter Vetch *Vicia orobus* which we had read was on the verge on the Peebles road. Several cars (ours) blocked the road, while we hunted for quite

some time, before finding the plant, the flowers well past. Will we remember to go and look next year?

It was with pleasure that we settled down to tea on the lawn with Eric and Eileen. The sun stayed out while we enjoyed lovely cakes and good chat; a pleasant end to a lovely day. Many thanks to our leaders.
Sandra Stewart

BLAWHORN MOSS

Date 29th July
Leader John Watson

Our party foregathered at Eastcraigs Hill, above Blackridge, West Lothian. Despite its modest height of 241 metres, this hill offers a surprisingly good panorama. The Campsie, Ochil, Lomond, Bathgate and Pentland Hills are on the skyline, with Tinto just discernible in the haze. The hill sits above the Central Scotland coalfield and the whole area has been extensively mined (deep and opencast). The pits, along with the brick and iron works and their forest of smokestacks are all long gone.

The old Edinburgh to Glasgow stagecoach road runs over this hill and it has been suggested that Blawhorn Moss takes its name from the coaches trumpeting their approach to the nearby Craigs Inn, a former coaching station. Unfortunately this stretch of the coach road is impassable for most of the year, having been churned into a quagmire by the local cattle herd.

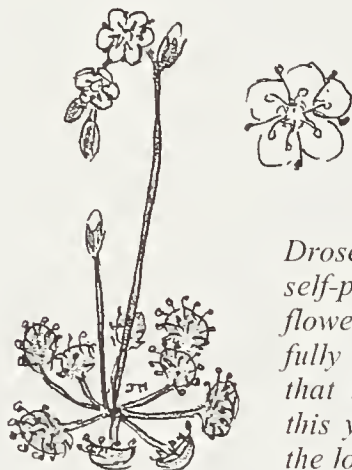
After this brief interlude the party, 12 strong, moved on to Blawhorn Moss and met up with Ian Bray, Area Officer (West Lothian) from Scottish Natural Heritage who own the Moss. Ian took us out to the boardwalk and regaled us with an excellent history of the bog from earliest times. Thereafter, he escorted us on our wanderings around the bog. I quote freely from Ian in this report.

The Moss had been the property of the National Coal Board who had intended to opencast mine it. Luckily, they were dissuaded and, in fact, they gifted it to the former Nature Conservancy Council. Previous to this, various farmers/landowners had made serious efforts to drain the Moss, with some success and Scottish Natural Heritage is now working to undo this and to raise the level of the water table. The Moss is technically a raised bog and is the largest such in the Lothians. It has National Nature Reserve, Special Area of Conservation and SSSI status.

At its deepest, the peat, measured at 9 metres, is reckoned to have been building for around 10 Millennia and it must have started to accumulate soon after the last glaciation (The Loch Lomond Readvance).

Botanically, the moss is rather species-poor but this is made up for by the ambience of the place - a wide and lonely moor situated amidst, but out of sight of the surrounding urban sprawl. However, there were some

delights: little carpets of Cranberries *Vaccinium oxycoccus* everywhere, among the Sphagnum; Common Sundew *Drosera rotundifolia* just coming into flower; and dense swathes of Bog Asphodel *Narthecium ossifragum* alas just gone over, a week earlier it had been a sea of yellow.



Drosera rotundifolia often self-pollinates and the flowers are seldom seen fully open. It is thought that they may have opened this year as a response to the long dry period.

Our last port of call was the pond, which proved to be interesting. Of special note was the assortment of Odonata which were observed: Common Blue Damselfly *Enallagma cyathigerum*, Blue-tailed Damselfly *Ischnura elegans*, Large Red Damselfly *Pyrrhosoma nymphula*, Emerald Damselfly *Lestes sponsa*, Common Hawker *Aeshna juncea*, Common Darter *Sympetrum striolatum* and Black Darter *Sympetrum danae*.

It was an interesting day, given the bleak terrain. The weather had been warm and cloudy, the rain just holding off until we got back to the car park.

Our thanks to Ian Bray for giving us the benefit of his knowledge, time and talents.

John Watson

ETTRICK MARSHES

Date 5th August
Leader Mary Clarkson

The floodplain of the upper River Ettrick is being restored and enhanced by the Borders Forest Trust to provide a haven for wildlife. Non-native conifers have been removed and native broad-leaved trees such as Alder, Birch, Willow, Aspen and Rowan planted. Paths and boardwalks have been provided to give visitors easy access without disturbing wildlife.

We followed paths on the very edge of the marsh and made one sortie into the marsh itself, so that we saw heath species as well as marsh ones. The flowers of Melancholy Thistle *Cirsium heterophyllum* and Ragged-Robin *Lychnis flos-cuculi*, which are a spectacular sight earlier in the summer, were over but, all the same, we saw a great variety of species - birds, insects and fungi as well as plants. Evidence of Bronze Age settlement is supposed to be visible on the

route through the marsh but I must admit that I could see no trace of this. However, we did see many typical wetland plants including Marsh Cinquefoil *Potentilla palustris*, Water Plantain *Alisma plantago-aquatica*, Bogbean *Menyanthes trifoliata* and Bottle Sedge *Carex rostrata*. Heathland plants such as Tormentil *Potentilla erecta*, Blaeberry *Vaccinium myrtillus* and Heather *Calluna vulgaris* clothed slopes overlooking the marsh. Birds observed included Buzzard, Kestrel, Great Spotted Woodpecker, Siskin; and a Sedge Warbler, agitated at the presence of a juvenile Cuckoo. A good crop of Chanterelles *Cantharellus cibarius* under the trees would provide a tasty meal for one participant, though Saffron Milkcaps *Lactarius deterrimus*, also edible, were too dry to tempt the palate. Insects were the stars of the day. About five minutes after leaving the cars in the morning, a fearsome-looking yellow and black insect with a long spike at its tail was noticed buzzing around near a fallen conifer. This was a female Horntail *Urocenus gigas*, a type of Sawfly, which is harmless and which uses the spike, its ovipositor, to bore into wood to lay its eggs. Males are smaller and not seen very often as they fly around the treetops. However, some of our party were lucky enough to see a male in the afternoon, at the far end of our route. In that area, too, we had excellent views of the Scotch Argus Butterfly, uncommon in southern Scotland, whose larvae feed on Purple Moor-grass *Molinia caerulea*, abundant in the marsh. The day was rounded off with tea and cakes out-of-doors at a nearby farm teashop.

Mary Clarkson

TYNINGHAME AND BEYOND, IN SEARCH OF LICHENS

Date 12th August
Leader Chris Ellis & Becky Yahr, with special guests Brian & Sandy Coppins

The day dawned fresh and bright, and a stalwart party assembled at Tynninghame car park, at the far end of the Lime Tree Walk. A brief introduction to lichens followed, outlining the features essential to their field identification, and a short discussion ensued (and was to continue at intervals throughout the day), concerning various aspects of lichen structure and function. Without further delay the party set off in the direction of the sea, with frequent stops to examine common epiphytes occurring in the woodlands along the way, e.g. *Lepraria incana*, *Parmelia sulcata*, *Xanthoria parietina*. At this point the arrival of Bella, a sleek and lively mongrel, fore-warned of the approaching presence of Brian and Sandy Coppins, who joined the party in time to demonstrate the use of chemical spot-tests: 10% potassium hydroxide (K) was applied to *Phlyctis argena*, and lichen chemistry discussed while the reaction changed slowly from yellow to blood red (identifying the presence of norstictic acid).

We arrived on the breezy beach in sunshine, with tremendously clear views across the Forth. The point of

arrival provided the opportunity to observe the small band of cliffs, forming the point adjacent to St Baldred's Cradle, at a suitable distance, and the zonation of lichen communities: black grading to orange grading to grey, from the lower littoral to the xeric cliff-top. We headed over the sand and proceeded to scramble through each of the lichen zones across the rocks and up the small cliff, observing the key species and their features: e.g. lower (black zone), *Verrucaria mucosa* and *maura* (crustose lichens with perithecia); middle (orange zone), *Caloplaca marina* (crustose lichen with apothecia) and *Caloplaca thallincola* (lobate lichen with apothecia); upper (grey zone) *Anaptychia runcinata* (foliose lichen with apothecia) and *Ramalina siliquosa* (fruticose lichen with apothecia and pycnidia). Like true lichenologists we proceeded to crawl across the cliff-top heath, hand-lenses poised above the close-cropped turf and rocks, observing *Parmelia saxatilis* (foliose lichen with isidia), *Pertusaria pseudocorallina* (crustose lichen with isidia) and the soil crust *Ochrolechia inaequatula*.

At lunch time Brian and Sandy Coppins departed to meet another engagement, Brian reluctant to leave the lichens behind. However, before leaving Brian had been able to relocate a well developed area of *Verrucaria striatula* and the rare *Verrucaria amphibia*, both located very low in the black zone, which Chris was then able to show to members of the party. This formed the point of departure and we headed back inland, finding *Lecanora conizaeoides* on a pine. This species has an interesting ecology, and was once widespread across Britain during a period of severe sulphur dioxide pollution, though as the air becomes cleaner it is rapidly retreating and is now rare in many parts of the country, where it was once wide-spread.

The woodland walk back to the car park proved rather too shady for luxuriant lichen growth, though fallen branches from the tree tops included a nice community of foliose and fruticose lichens, e.g. *Hypogymnia physodes*, *Ramalina farinacea* and an unidentified *Usnea* sp. The day ended with a bang, however; on the Ash trees adjacent to the car park we examined a specimen of the 'script lichens', with *lirellate* apothecia, and *Flavoparmelia soredians*, a lichen that occurs in southern England, but is known from only two sites in Scotland – testament to the sunny nature of the Tynninghame coastline?

Chris Ellis

THE BINN, BURNTISLAND

<u>Date</u>	19th August
<u>Leaders</u>	Frances and Munro Dunn

After the rain of the previous day, and with more forecast, everyone turned up with waterproofs at the ready. There was thick mist at the Forth Bridge, however Fife was blessed with beautiful weather.

Since the tide was at its highest the initial walk along the coastal path yielded only Terns. A short stroll

through the town led to The Binn which looked alarmingly high. A path took us gradually up through woodland and along the edge of the escarpment from where there were wonderful views over the town and up the river to the Bridges. Along the way we found Field Scabious *Knautia arvensis*, Agrimony *Agrimonia eupatoria* and Hairy Rockcress *Arabis hirsuta*, while Grasshoppers were seen as we had a leisurely lunch in the warm sunshine.

Betty Mitchelhill explained some of the geological features - the summit had been a volcanic vent - and the difference between conglomerates and agglomerates, conglomerate being pebbles of various rocks cemented together; agglomerate being fragments of volcanic deposits. The route undulated over a series of subsidiary tops before descending to a small lochan where there were Coot and Moorhen and a Red Darter Dragonfly. A Green Woodpecker was heard, while Buzzards and a Kestrel flew overhead. Several Peacock Butterflies as well as a Small Tortoiseshell, Small Copper, Painted Lady and Green-veined White were seen.

The final descent through a meadow and woodland took us back to the town. Several stops were made by some of the group to read about the history of the town and the famous people who had lived there including Mary Somerville, a noted mathematician, after whom an Oxford college was named, and William Dick, founder of the veterinary college. In 1601, at a meeting of the General Assembly in Burntisland's 16th century parish church, James VI first proposed commissioning the Authorised Version of the Bible.

Frances and Munro Dunn



HOPES RESERVOIR

<u>Date</u>	26th August
<u>Leader</u>	Jackie Muscott

With the Heather *Calluna vulgaris* in full flower and some patches of deep purple Bell Heather *Erica cinerea* still in bloom on the hillside, Hopes Reservoir was at its most scenic for the Nats visit.

Botanically it was not the best time of year, with just a few flowers - Eyebright *Euphrasia* sp., Harebell *Campanula rotundifolia*, Wild Thyme *Thymus*

polytrichus and Bird's-foot Trefoil *Lotus corniculatus* - still surviving the hot dry weather and the sheep grazing. However there were large patches of Musk *Mimulus moschatus*, the smallest and hairiest of the introduced Monkey Flowers, well-established amongst the Blinks *Montia fontana*. Brooklime *Veronica beccabunga*, and Water Forget-me-nots *Myosotis spp.* of the riverside. There was also a good supply of Creeping Thistle *Cirsium arvense* on the nearby flats; an unpopular plant with farmers and gardeners, but one whose strongly-scented flowers attract a wide variety of insects, and whose seeds are popular with Goldfinches.

The Thistles were being visited by Bees, Hoverflies and a variety of Butterflies including Green-veined White, Small Copper, Peacock, Red Admiral and Painted Lady. But most exciting of all was the appearance of a Hummingbird Hawkmoth *Macroglossum stellatorum*, like the Red Admiral and the Painted Lady an immigrant, but one rarely seen this far north. It took little notice of its admirers, hovering by flower after flower as it probed for nectar with its long tongue, so everyone in the party had a splendid view.



HUMMINGBIRD HAWKMOTH
rarely seen this far north

After this diversion we headed for the foot of the reservoir. The hills round about have the largest stand of Juniper *Juniperus communis* in the Lothians, and some of the bushes have prostrate trunks about a foot across, and must be very old. Some of the Juniper lies within the reservoir fence, but most of the bushes are on the open hillside, subject to the attentions of sheep and rabbits, and one wonders what efforts are being made to protect them. Among the trees which thrive within the reservoir fence are a number of Rowans *Sorbus aucuparia*, and where Rowan and Juniper grow together it's always worth looking for the spectacular rust *Gymnosporangium comutum*.

The rust was present in abundance: all the Rowans were heavily infected, the leaves covered with give-away red spots on the upper surface, below which one finds yellow swollen areas from which grow eyelash-like horns. In spring the fungus turns its attention to the Juniper where infection produces bright orange jelly on the bark which hardens and darkens with age.

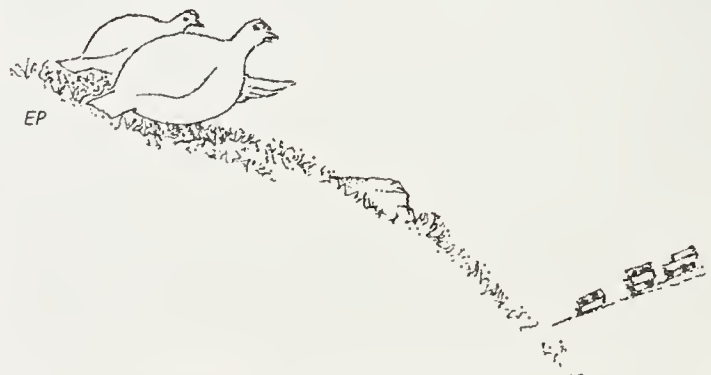
Interestingly one foreign Rowan-like *Sorbus* had been planted in the wood, and this was entirely clear of the infection. Similarly the Norway Maple *Acer platanoides* is unaffected by the Tar Spot fungus *Rhytisma acerinum* which is common on its relative the Sycamore *Acer pseudoplatanus*. Fungi are pretty good botanists!

We had lunch in a sunny spot below the reservoir, and then made the circuit just outside the fence. Here we were treated to a fine selection of heathland flowers; beside the Heathers there was Blaeberry *Vaccinium myrtillus*, some plants with berries and others beginning to take on autumn colours before shedding their leaves; Cowberry *Vaccinium vitis-idaea* which has tough evergreen leaves and bright scarlet berries, not to mention a few white bell-shaped autumn flowers; and Crowberry *Empetrum nigrum* with small evergreen leaves and shining crow-black berries. Excitement was added by the discovery of two young plants of Stag's-horn Clubmoss *Lycopodium clavatum* close to the path.

Large fungi were also present. There were quite a lot of Field Mushrooms *Agaricus sp* in the unimproved grassland; Larch Bolete *Suillus grevillei* near a small stand of Larch; and quite a few mushrooms associated with Birch, the predominant tree. The latter included the greenish *Russula aeruginea*, the Roll Rim *Paxillus involutus* and the handsome Orange Birch Bolete *Leccinum versipelle* with its orange cap and sturdy white stem covered with dark scales. There must once have been a considerable Birch wood to one side of the reservoir, but this seems to be in process of dissolution as the grazing prevents any new growth. A pity.

Birds were not greatly in evidence, (not even a duck on the reservoir) but there was a Buzzard overhead, a Dipper in the river and Grouse on the hillside. There was also a shooting party out, but some of the Grouse were still cackling away once the gunmen had left. The weather favoured us with a few bursts of sunshine and also a few showers, but most people were back to their cars by the time of the heaviest burst. So, altogether, a good day.

Jackie Muscott



OK, BOYS! ALL CLEAR; THEY'VE GONE FOR LUNCH.

PENICUIK ESTATE

Date 2nd September
Leader Heather McHaffie

It was to be a day of Ferns, but what a day - cats and dogs, more like. It started off wet and got wetter ... and wetter. But it is a measure of the calibre of our leader that we ignored the rain, and cheerfully listened and learned as Heather showed us the similarities and differences between the Ferns and Horsetails in the wood.

We saw five of Scotland's eight Horsetails and a good selection of Ferns, and should now know the difference between bipinnate and tripinnate!

We huddled under the trees for lunch, suddenly noticing for the first time that we were wet....very wet! In spite of that, everyone was keen to continue our walk in the afternoon. Heather had bowled us along by her enthusiasm and cheerfulness.

She even agreed to give us an article on Horsetails (Page 23).

Editors

HOUND POINT

Date 9th September
Leader Tom Delaney

There was an excellent turnout for our excursion. In addition to all the usual suspects, we also had a new candidate for membership.

Our walk through Dalmeny Estate to the Point seemed to take no time at all. On the way, a movement in the undergrowth revealed first one, then half a dozen young Pheasants, all quite tame, probably on their first outing from a rearing pen. A Jay was heard distantly, but otherwise the woods were quiet. On the shore, Jackie M. found a number of reddish jellyfish... not identified..., and along the way there were several fungi, including: Brown Birch Bolete, Parasol Mushroom and the transparent, little, yellow *Bolbitius vitellinus*. One *Amanita* not identified on the spot may have been *A. virosa* or *A. vaginata var alba*.

At the Point, we found a fine array of rubbish and broken bottles strewn around, the aftermath of an obviously enjoyable gathering. Quite undaunted Dorothy, Jackie M, Mary C. and others were swiftly to the rescue and picked up and bagged a huge amount of this litter, leaving the place looking a whole lot better.

Looking for Skuas at Hound Point is a hit or miss affair: although you do get really good days there, sometimes it is very quiet. In those circumstances, you have two alternatives.... scan everything that moves, no matter how distant.... or just relax and enjoy the scenery. With three scopes and a battery of

binoculars, we had high hopes of success, especially since the chosen date is at the peak of the Skua passage in the Forth. First scans were not productive, but after a bit of a while we had first one then two Arctic Skuas quite close, repeatedly chasing Sandwich Terns, and then settling on the surface to digest their second-hand rations. Later there were two Bonxies (Great Skuas) on a fly past, showing their sergeant's white wing chevrons.

More distantly, an occasional Arctic Skua could be seen through the telescope, harrying Terns in the direction of the Oscars Light. A Bonxie decided to chase one of these Arctics, but after a few moments the roles were surprisingly reversed.

We had hoped Pomarine or Long-tailed Skua might turn up, but none appeared.

On the water, there were a few Common Scoters, and the Eiders were still in somewhat mixed plumage. A small pack of Teal and a group of Wigeon also put in an appearance. A Buzzard called overhead and another was picked out soaring high over woodlands in Fife.

The weather was exceptionally fine; Grasshoppers were heard and Seven-spot Ladybird and Silver Y Moth were also found. Butterflies seen included Peacock, Green-veined White and Small Copper.

Several members headed east to Long Green, where the shingle bank holds an interesting community of plants. Those found included: Golden Rod *Solidago virgaurea*, Scots Lovage *Ligusticum scoticum*, Tansy *Tanacetum vulgare*, Devil's Bit Scabious *Succisa pratensis*, and Wild Marjoram *Origanum vulgare*. Sea Campion *Silene uniflora* was looked for but not seen. On the beach there, as the tide came in a large flock of Curlews and Oystercatchers gathered, while on the water there was a flock of 30 or more Great Crested Grebes.

Given the glorious weather and the essentially static nature of the sea-watch, by lunch time the excursion had become more of a picnic party; we sat on the grass, ate our sandwiches and enjoyed the splendid views over Fife, the Forth and Edinburgh.

After lunch, remembering the line: 'Distance lends enchantment', and with eyes tired of scanning the ocean for birds often little more than a speck, I found it fascinating to scan the distant shore through the telescope and to look at those far-off fields and woods, churches and castles, villages and harbours compressed into a tiny image, silent and remote, with all trivial detail somehow invisible.

Tom Delaney (with help from Mary C and Jackie M)



STONEYBURN BING

Date 16th September
Leader Mary Clarkson

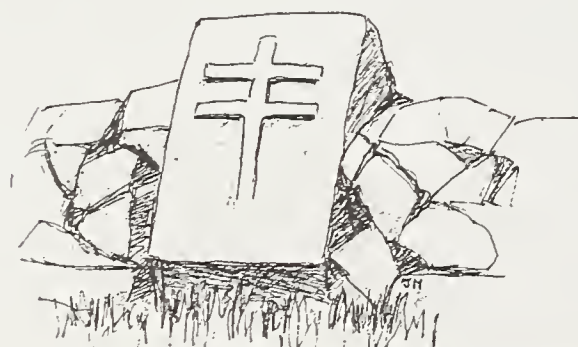
It was a haar-ish morning following days of warm sunshine, and the damp cold seeped through summer clothing before people made haste to don anoraks and warmer jerseys. But the first problem was to find the parking spot. Stoneyburn was easy, but where to turn off right? and where was the PH (Public House), indicated on the 1992 OS map opposite the track to the bing? Trial and error proved effective, and eventually on the appointed hour the leader, Mary Clarkson, swept into view to resolve any lingering doubts. She was met by 12 members armed with a variety of fungal gathering equipment.

The morning was spent scouring a wood composed mainly of young Birch, with open spaces where Heather and fruiting Stag's-horn Clubmoss predominated. Fungi were plentiful. Little brown *Inocybes* were everywhere; Brown and Orange Birch Boletes *Leccinum scabrum* and *L. versipelle* as well as Slippery Jack *Suillus luteus* were frequent, as were Woolly Milk-cap *Lactarius torminosus* and several types of *Russula*. Finds were laid out for identification at lunch-time, by which time the low clouds had disappeared to reveal a warm sun, and members were stripping off the excess clothing put on in the morning. Among other finds were *Amanita muscaria*, *A. rubescens* and *A. vaginata*, Brown Roll-rim *Paxillus involutus* and Poison Pie *Hebeloma crustuliniforme*.

In the warmth of the afternoon the party climbed up the bing to the conifer woods where different fungi were to be found, some like *Mycenas* and *Collybia confluens* in large clusters. *Suillus flavidus*, a Highland species, was an interesting find, probably imported with the conifers on planting. Other *Russulas* typical of conifers such as *R. emetica* were abundant. *Crepidotus*, Horse-hair Fungus *Marasmius androsaceus*, *Collybia maculata* and *Heterobasidion annosum* were other finds.

A very satisfying day came to an end with a pleasant walk through the woods to the cars. There had been a real opportunity to grow familiar with some common fungi.

Andrew Gilchrist



THE SANCTUARY STONE

WITCH CRAIG

Date 23rd September
Leader Betty Mitchelhill

Despite the weather forecast it was a bright sunny morning when a party of Nats gathered by the Korean War Memorial near Beecraigs Country Park en route for Witch Craig. The memorial, to those Scots who died in the Korean War, takes the form of a pagoda surrounded by Korean Firs *Abies koreana* (for some reason referred to as 'pines' in the brochure). The trees are very neat and quite small at present, but many of them were already bearing cones. They should grow to between 40 and 50 feet (15 metres).

From the memorial the path leads upwards to Witch Craig, one of the many volcanic hills in the area. It is a splendid viewpoint, and a protective wall has been built on the summit offering both shelter and education, as the wall, built mainly of sandstone, incorporates a number of other stones illustrating the varied local geology. Scattered through the wall are examples of Igneous Rocks (Basalt and Porphyry) spewed up from ancient volcanoes; Sedimentary Rocks (Sandstone, Limestone, Shale and Conglomerate) often laid down under ancient seas; and Metamorphic Rocks (Slate and Greenstone) sedimentary rocks which have been subjected to intense heat and pressure. We had a lot of fun finding the relevant stones and criticising the leaflet which seemed sometimes at odds with the information board, and neither leaflet nor board provided an explanation for the stone labelled 'R' let into the pavement.

Our attention was then drawn to the Sanctuary Stone carved with the cross of Lorraine and situated in a dry stone wall nearby. About a mile away at Torphichen lie the remains of the 12th century Preceptory of the Knights of St John, built on land granted by David I. Apparently outlaws and fugitives could gain sanctuary there once they got within a mile of the church, and this stone, and others like it, marked the boundary of the safety zone.

The rest of the day was devoted to wildlife in its various forms, as the party descended a new path to the heart of Beecraigs Country Park and thence to Beecraigs Loch. There was Heather *Calluna vulgaris* and Blaeberry *Vaccinium myrtillus* on the hilltop, and a surprising amount of the Blaeberry was having a second go at flowering, while elsewhere it was in fruit. A lot of trees had been planted, including a nice patch of Juniper *Juniperus communis* on the hillside, but in the valley hardwoods had been planted in regimented rows, in blocks of a single species, and very close together. A pity.

Soon we were into the conifer woodland which comprises most of Beecraigs, and before long were noticing a variety of fungi - wood rotters like Honey Fungus *Armillaria sp.* and Candlesnuff *Xylaria hypoxylon*; leaf-litter mushrooms like the Amethyst

Deceiver *Laccaria amethystina* and the False Chanterelle *Hygrophoropsis aurantiaca*; and tree associates like Slippery Jack *Suillus luteus* and various *Russulas* and *Lactarius spp.*

We had lunch sitting on logs in a sunny glade and were entertained by a whole family of Buzzards. Moving on, we were soon in sight of Beecraigs Meadow with its nearby car park and its Saturday crowd (we had seen nobody else until now). They took no interest in the pond which was soon the centre of our party's attention, as two species of Dragonfly were laying - a pair of Black Darters *Sympetrum danae* in tandem and a much larger female Hawker *Aeshna juncea* laying alone. She was taking her time over it as she was busy inserting her eggs into floating vegetation near the shore, so we all had a good view of her.

There were also some Emerald Damselflies *Lestes sponsa* and a single blue Damsel, probably the Common Blue *Enallagma cyathigerum*, flitting about.

From here we made the circuit of Beecraigs Loch, an attractive picture, with fishing boats and common waterfowl reflected in the sunny waters. A few late flowers could be seen in the grassland below the dam; Smooth Lady's Mantle *Alchemilla glabra*, Ox-eye Daisy *Leucanthemum vulgare*, Cat's-ear *Hypochaeris radicata* and Meadow Cranesbill *Geranium pratense*, while a splash of scarlet was provided by a single Norway Maple *Acer platanoides* taking on its autumn colours.

Back through the wood where a number of fungi were growing on conifer stumps and logs - *Tyromyces caesi*us, a soft bluish Bracket, *Calocera viscosa*, orange spindles, and *Heterobasidion annosum* a large hard Bracket, dark brown with a white edge, which spreads from stumps to living trees and eventually destroys them (we saw a few which had been infected). All these fungi specialise in conifer wood, but the commonest fungus on dead stumps was Sulphur Tuft *Hypholoma fasciculare* which is happy on just about any kind of dead wood.

Soon we were back at the car park, at the end of a varied and interesting day.

Jackie Muscott

LORD ANCRUM'S WOOD, NEWBATTLE

Date 30th September
Leader Mike Richardson

The grounds of Newbattle Abbey are not well known by the Nats as in recent years there has been only one visit when an evening was spent identifying trees. In the front of the Abbey there is an area of parkland with a scattering of fine old trees. Behind the building there is a small formal garden and surrounding all these is extensive woodland.

Mike Richardson was our leader and he could not have chosen a better place for a fungus foray. As always, his enthusiasm was infectious and he never tired of answering questions. The outing started with a closer look at an ancient rotting tree stump which produced quite a variety of species including Inkcaps and one of the Honey Fungi.

On the whole the grassland in front of the house was a bit disappointing, perhaps because the grass was rather long. Other areas of grassland surrounding the house and in the woodland were more exciting. However one magnificent Beech tree had a big display of over fifteen *Russula chloroides* growing round its trunk.

The main part of the day was spent in the woodland and fungi were everywhere - *Russulas*, *Boletes*, *Milkcaps*, *Coral fungi* and *Puffballs* to mention a few. Finds of special interest were Jelly Babies *Leotia lubrica*, and Green Earthtongues *Microglossum viride* growing near each other under mature trees; Hare's Ear *Otidea onotica* and Common Bird's Nest *Crucibulum laeve*. Also in the woodland were several Meadow Waxcaps whose colours were much brighter than when they are found in their normal habitat. Near the house were more Waxcaps including the bright red variety of the Parrot Waxcap *Hygrocybe psittacina* var. *perplexa*.

Thank you, Mike, for giving us such a rewarding day.
Elizabeth Farquharson

WOODHALL DEAN

Date 14th October
Leader Neville Crowther

As the best preserved Sessile Oak woodland in SE Scotland, Woodhall Dean is both a SSSI and one of the finest of the Scottish Wildlife Trust reserves. It consists of a series of wooded, steep-sided gorges branching upwards into the Lammermuirs. These 'deans' were created in late glacial and early post glacial times by melt waters from the Southern Uplands ice sheets, but now have comparatively, only a trickle of water flowing in them. Twenty eight folk, both young and old(ish) assembled by the ford at the Brunt; most were Nats members with a small number of Botanical Society of Scotland and half a dozen new faces drawn in by an interest in fungi. The small car park was packed.

The walk followed the burn of Woodhall Dean to the old Pack-horse bridge over the Weatherley Burn before climbing up to the most recently planted compartment in the south west. Here, overlooking the Steel Cleugh we had lunch. The weather was warm and sunny with blue skies – perhaps presaging mid Octobers of the future.

Three species of *Nymphalid* Butterfly were still on the wing, all looking as pristine as newly hatched second generation adults should be. There was a single Small

Tortoiseshell but Red Admirals were the most numerous. Three Commas were an unexpected sight, nectaring on Bramble fruit; another possible 10 kilometre square extension to its range. It is only seven years since the first one was seen in Scotland.

Heard long before they came into view, a skein of about fifty Pinkfeet crossed the Dean above us at a convenient clearing. Buzzards were hanging into the wind, mobbed by Corvids, and the plaintive winter song of the Robin was heard everywhere. Pheasants exploded by the half dozen out of the undergrowth, and Roger and others flushed a Tawny Owl from its daytime roost by the Cleugh Burn.

The class find of the day was of a magnificent specimen of Horn of Plenty *Craterellus cornucopioides* – a velvet black and grey ‘champagne glass’ - brought into our lunch time gathering in triumph by Jackie and Mary, who had taken a different path from the main party, and effectively done part of the afternoon route in reverse! It had been found growing in dense Woodrush *Luzula sylvatica* tussocks which dominate the field layer in the Oak woodland. The rest of us saw it *in situ* later in the day.



HORN of PLENTY

A wonderful stand beneath Birches of a large yellow capped *Cortinarius* baffled any who might have ventured a guess about its identity. It was left to Mary Clarkson later that weekend to key it out as *C. triumphans*: surely a name well deserved. A hundred yards further on in grass and Brambles again under Birch were a number of large robust pure white agarics which at first were thought to be *Lyophyllum connatum*. Eventually those with enough knowledge settled on *Tricholoma alba*. It was left again to Mary’s diligence to discover it to be *T. stiparophyllum*, a recently described species which she sent to Roy Watling for confirmation.

In the afternoon we descended into the gorge, crossing the bridge at Tinker’s Leap and followed the track back eastwards. This coppiced Oak woodland was historically managed for charcoal and for tannin. The last fellings took place over a hundred years ago, so the coppices now are 15 -20 metre tall, with the standards even taller. We followed the ramp of an old railway down towards the pack horse bridge. At one time it carried the wooden carts by which the fellings were extracted. All of us were impressed by the massive heaps of earth and bedding at the nearby large Badger sett. One new entrance had been excavated in the last month, making five major entrances. Several radiating Badger tracks and a few latrines are present in the vicinity. We could only guess at the size of the clan, perhaps twenty?

Those in the party wishing for edible specimens of fungi were not entirely disappointed as Parasols *Macrolepiota rhacodes* were common under the Oaks and several Horse Mushrooms *Agaricus arvensis* and one large Cep *Boletus edulis* were found at the circular meadow. A week afterwards Eunice was still describing with relish how she ate the latter.

We were interested to see on the Oaks, different galls, named for their shapes - Spangle, Marble, Knopper & Artichoke, all easily identified. The gall tissue is created by the tree in response to the laying of eggs by various wasp species of the family *Cynipidae*. By enclosing the egg in this way, the tree isolates the alien organism and protects itself.

Although the uniform age structure of the coppiced wood produced few fallen trees and of course few of their associated saprophores, we did collect 88 species of fungi during our walk. The three most common appeared to be Brown Roll Rim *Paxillus involutus*, Rosy Cracked Bolete *Boletus chrysenteron* and the Oak Milkcap *Lactarius quietus*. Visually striking species were the yellow scrolls of Hare’s Ears *Otidea onotica*, the ivory ‘antlers’ of Wrinkled Coral fungus *Clavulina rugosa* and the ‘raw liver’ of the Beefsteak Fungus *Fistulina hepatica*. All in all it was an excellent day with lovely weather. Global warming obviously is not universally bad.

Neville Crowther

ABERLADY BAY

Date
Leader

18th November
Bill Clunie

A cold windy morning with a rough sea and snow on the distant hills was the setting for Bill’s outing. Standing on the shore at Gullane Sands looking over towards the west, we could hardly stay upright, but the view was marvellous, of the Edinburgh skyline and the Fife coast

We looked through the telescope to lovely sightings of Golden Plover, Grey Plover, Sanderling, Dunlin, Bar-tailed Godwit and other waders.

Once we had battled our way along the sand and rounded the corner towards Gullane Point it was more sheltered and by the time we reached the Point, which was our lunch spot the wind had somewhat abated and the sun had come out. We found a lovely sheltered spot out of the wind and enjoyed identifying birds on the water, among them Common and Velvet Scoter, Long-tailed Duck, Red-breasted Merganser and Red Throated Diver.

We continued to Hummel Rocks before turning for home. A good day. As always Bill helped us to spot and identify a good tally of 34 birds, including Goldfinches and Linnet in the Gorse, and the usual Gulls and Geese, possibly including a Brent Goose.

Editors

RATHO

Date 28th December
Leader Janet Watson

Seventeen members met at the church car park in Ratho on a slightly misty but not cold day. We walked along the road in a south-westerly direction towards Bonnington Mains, to the outskirts of Ratho, where we picked up a path through the trees, created for the Millennium. A viewfinder had also been placed, facing eastwards, but it was too misty to see far; we did see a lot of noisy Chaffinches and a Great Spotted Woodpecker. The path led us to the wooded knoll of Tormain, about 140 metres high, where there was another viewfinder, this time facing westward, but although the sun was on the brink of breaking through, it failed to do so. A stile led us into the wooded area where rocks with cup and ring marks were indicated on the map.

The path was circular and cleverly made, as, if one kept to it, one would not see the marks, which were clearly visible on a flat stone in the centre. There was no indication at all that they were there, which was all to the good, in view of possible vandalism. Another path led us off the hill and back on to the road, at the end of which we turned north down a not very inspiring road, but we did see some Goldfinches. We then picked up a pleasant section of the canal, where we saw a lot of Candlesnuff fungus, and so back to Ratho, a distance of about 4.5 miles in all. We were then ready for lunch, which we had in the Ratho Park Hotel, where we had a good and varied menu.

Janet Watson



OBSERVATIONS on MICROMOTHS
Coleophora caespitiella

On passing stands of Rushes during our autumn excursions, my attention was drawn to many tiny, fawn-coloured, cylindrical bodies clustered on the heads of the plants. These, I was told, were the cases of Micromoth larvae. Since insect larvae are commonly free-living organisms which forage around for their food supply, I was curious to investigate the contents of these seemingly immobile packages.

The cases (5mm long) were carefully picked off the seed heads and placed on a sheet of white paper in a transparent box. A seed head was placed at some distance from the cases. After 2 hours or so, some of the cases had moved from their original site, and by 24 hours, several were attached to seeds.

By chance a number of these little creatures were caught 'on the move'. Examination with a hand lens showed a black head and forepart of the body protruding from the case, the whole being propelled along by several pairs of legs.

The larva remains in the case through to maturity, when it emerges as a cream-coloured moth of 5mm in size. So, the micromoth provides yet another example of adaptive behaviour in the insect world. The larva has developed the ability to spin a protective case around itself without hindering its mobility.

Margaret Perry



NAIRN

Monday 12th to Friday 16th June

INSH MARSHES, THE ASPEN WOOD & ASPEN HOVERFLY

On our way north on Monday we stopped at Insh Marshes, Kingussie. Pete Moore, the RSPB warden for Insh Marshes, welcomed us, gave us a description of the RSPB's work at the reserve and then took us to the hide overlooking the marshes. His son Rowan was with him, learning the ropes on a work experience project from school.

Insh Marshes, an SSSI, an NNR and a Ramsar area of conservation, is situated beside the River Spey between Kingussie and Kincaig. 880 hectares of the 1,000 hectares reserve are managed by the RSPB, with flood management being carried out. With water coming off both the Monadhliath and Cairngorm Mountains and up-welling from the valley floor, there can be extensive flooding without any management. There are 26 species of sedge on the site, this being one of only two sites in Scotland where String Sedge *Carex chordorrhiza* occurs (and the best!). This is also possibly the best site in the UK for Spotted Crake, with 12-16 calling males in past years, although none were recorded in the last three. Other breeding waders in the valley here are Snipe (300-500 pairs), Curlew, Lapwing and Redshank (several 100 pairs). The whole of the Scottish population of breeding Goldeneye (100 pairs) nest in the valley between Laggan and Grantown-on-Spey, where numbers increased after the 1970s when nesting boxes were put in.

After a brief visit to the Gordonhall hide, Pete led us on to the Aspen Woods. The Aspen *Populus tremula* is one of the most under-studied species, with only five study sites in Scotland. It is the largest living organism above ground – it rarely sets seed, instead sending out suckers from the parent tree. The wooded area is fenced off to keep roe deer and rabbits out, to prevent them from rubbing down or stripping the bark off the trees.

It is not just the living tree that is being protected and encouraged, but also, and equally important, dead trees. After the tree dies and has lain for 1.1 years, micro-organisms decay the sap, which turns into a smelly thick soup under the bark. This is ideal for the Aspen Hoverfly *Hammerschmidtia ferruginea* whose larvae live in and eat this soup with the micro-organisms. The bark eventually splits, dries out and becomes of no use to the Hoverfly, being too dry. The larvae hatch out after about a year when the female of the species goes off to find another suitable piece of timber. The tree has to have been dead for exactly the right amount of time - a 2-year old piece of timber is



SMALL BLUE on Kidney Vetch, its food plant,

too old! About 4-5 hectares of wood is required to produce one suitable piece of timber. The Aspen Hoverfly was doing well in the 1980s, but did not fare so well in the 90s when there were not enough gales and therefore not enough dead wood. The RSPB felled a few trees to assist and it will be another few years before there is enough natural dead wood added to the system. The process is a long one with felled wood. The top third is cut off, then after a few years the next third is cut off. Another problem for the Hoverfly is fungi, which compete with the micro-organisms, so the wood is chain-sawed to prevent the fungi invading the 'soup'. Donated Black Poplar *Populus nigra* has also been used and a couple of larvae have been found on it recently.

Ellie Rotheray, a volunteer, has been carrying out a survey on the Aspen Hoverfly, and we were lucky enough to meet her. She described her work and showed us a hatching site. As the Hoverfly hatches and emerges from the dead log, she marks them, using a net to cover the log. The Hoverflies have been moving towards Tromie Meadow so 8 or 9 decaying trees have been relocated to that area. The insects are rare because of their fussiness; they don't fly far and don't live long, so wood is being regenerated for this alone.

Other specifics to Aspen are a fungus growing on bark, the Aspen Bracket *Phellinus tremulae*, and a leaf fungus which turns the leaf black. The Dark-bordered Beauty Moth *Epione vespertaria* lays only on low growing young Aspen. The larvae eat leaves of suckers and only the fresh pinky-coloured leaves, not the green ones. The nearest site where this moth occurs is at Grantown-on-Spey; however Insh Marshes is a suitable site for re-introduction, if it is decided to go along that route.

We saw lots of lovely plants, fungi, moths, butterflies, dragonflies and birds on our walk through the woods, but I am not going to list them all here, except one of note for me – the wonderful views we had at the very end of a Redstart flitting backwards and forwards from the same perch, right in front of our noses!

Joanie Fairlie

TUESDAY at CULBIN FOREST
with Jeff Waddell & Ian Green

The Forestry Commission had granted us permission to take a limited number of cars into the forest, so the meeting began at the Wellhill Car Park with the Nats splitting into small groups of four or five to a car. This allowed us to visit several different sites in the forest, including some distant coastal habitats which would have been out of reach otherwise.

The convoy of cars soon began to snake its way along the dusty forest tracks. The first stop was at some old gravel pits near the entrance. Here a shallow excavation which is subject to winter flooding contained the nationally scarce Marsh Clubmoss *Lycopodiella inundata*. The incredibly small Allseed *Radiola linoides* was pointed out and we had to get down on our hands and knees to get a better look. Dingy Skipper appeared for the first time and was later seen at several points during the walk. Culbin Forest is the national stronghold for this species, with literally miles of forest tracks fringed by its food plant, Bird's-foot Trefoil *Lotus corniculatus* providing ideal habitat.



DINGY SKIPPER on its food plant Bird's Foot Trefoil

The second stop was to pay homage at the memorial to Mary McCallum Webster, a noted local botanist remembered by some of our party. The memorial is an inscribed stone deep in the forest, where her ashes are scattered. Fittingly Wintergreens grow nearby, including Common *Pyrola minor* and Serrated *Orthilia secunda*. Careful eyes also spotted Creeping Lady's Tresses *Goodyera repens* and Lesser Twayblade *Neottia* (formerly *Listera*) *cordata*. A botanical memorial indeed.

The next stop was to see the Small Blue Butterfly which was quickly located on its food plant Kidney Vetch *Anthyllis vulneraria* by the edge of a forest track. The cameras were soon out and many of us enjoyed trying to take photos. Nearby Shepherd's Cress *Teesdalia nudicaulis* was spotted.

Finally the cars were parked in the Buckie Loch area, where the main walk of the day was to take place. We initially set off down the wrong trail, but this proved to be an interesting detour. As we retraced our steps a large insect was netted and we huddled around trying to photograph it – was it a bee or a beetle? Subsequent investigations showed it to be the Bee-

beetle *Trichius fasciatus*. The large colourful micro-moth *Euleia ministrana* was also a welcome surprise. Our false trail had proved most worthwhile!

Lunch was then enjoyed in an area of Birch wood near the dunes. During lunch one of the leaders was sent on a mission to check if the One-flowered Wintergreen *Moneses uniflora* was in flower. Sadly only leaves were found and it was decided that the site was not worth a visit by the rest of the group.

After lunch we left the forest and wandered out into a wide dry dune slack. Here Baltic Rush *Juncus balticus* and Seaside Centaury *Centaureum littorale* were recorded. Small Pearl-bordered Fritillaries were seen to the surprise of the walk's leaders, who hadn't seen them here before. One was captured in Eunice's 'meat safe' to show the group.

Moving on to a lush dune slack Adder's-tongue *Ophioglossum vulgatum* was abundant and the sharp eyes of the Nats located Coralroot Orchid *Corallorhiza trifida*. The Orchid is widespread in the forest, but it was unusual to see it out in the open instead of in the shade of trees.

Our final stop after a long drive back through the woods eventually took us to a stunning site for Twinflower *Linnaea borealis*. The colony is evidently thriving, spreading over tens of metres, the abundance of flowers forming a marvellous site. An excellent way to end the walk.

Our thanks go to Jeff Waddell and Ian Green for leading the walk and obtaining the necessary permission to take cars into the forest.

Roger Holme and Jeff Waddell.

WEDNESDAY at
CLASHACH QUARRY and COVE BAY

This was another glorious day and rather different from the other days in that one of the subjects was geology. We were fortunate in having Bill Baird as our leader, having had many enjoyable outings in the past. He is now living in Moray, but even there he could not escape being asked to lead a Nats outing.

We met at Sueno's Stone in Forres. Bill explained that this Pictish stone, standing over 20 feet high was the most remarkable sculptured stone in Britain, if not in all of Europe. It dates from about the end of the first Millennium AD. Its very size and the carved symbols are amazing. On one face is carved a cross showing the spread of Christianity. On the other face are symbols and battle scenes with warriors on horseback. The sides are covered with interlaced patterns.

We spent the rest of the morning at Clashach Quarry, which is on the coast between Hopeman and Lossiemouth. The quarry was reopened to provide the cladding stone for the new Museum of Scotland in Edinburgh. The Hopeman sandstone was laid down in

Upper Permian/Lower Triassic times.

At this time, approximately 250 million years ago, Britain was part of a huge land mass and lay under hot desert conditions, where it is difficult to separate Permian from Triassic rocks. It was the time just before the dinosaurs when mammal-like reptiles roamed the sand. Just as modern deserts are rich in life so must these deserts have been. The fossil remains of at least 12 different species have been found in the Elgin area and footprints are common. As these are unique to this area they are known as the Elgin Reptiles and most of them can be seen in the Elgin Museum.

We looked at the rocks both in Clashach Quarry itself and on the higher ground where the quarrymen had set aside rocks showing some of the best footprints. These varied in size from less than a centimetre to many centimetres. Some tracks showed two small footprints in front of two large ones; it was possible to see in which direction the creature had been moving. As well as footprints there were marks of claws and also tail drags. There was even what might have been raindrops! How had all this been preserved? The ground must have been slightly damp (early morning? after rain?), then it dried up and when sand blew over the prints they were preserved.

Recently an important cavity fossil was found. To reconstruct a solid shape can be very labour-intensive but nowadays can be done with the aid of a CAT scan. This Computed Axial Tomography is the process of using computers to generate a three-dimensional image from a series of flat cross-sections. The resulting model of this recent find is at the moment at the Hunterian Museum in Glasgow. It is thought that it will shed new light on life at the time just before the dinosaurs.

In the afternoon we walked down to Cove Bay, a lovely spot with many points of interest. On the cliffs we could see where whole sand dunes had been fossilised. There was clear dune bedding and also fine bedding where each bed must have been a separate event. There had been large faults and small movements as the sand lithified. There were large ironstone nodules and also very fine iron red layers. Altogether a very interesting rock exposure which would merit a longer study.

Throughout the day there had been many points of botanical interest, described by Jackie.

Betty Mitchelhill



SAND MARTINS at the Quarry

QUARRY AND COVE BAY: the Botany etc.

The interest of the day was not all geological. The quarry was home to a small flock of Herring Gulls nesting on exposed sandstone cliffs, and a colony of Sand Martins whose line of horizontal nest-holes showed where the sandstone ended and the soft sand above began.

As one might expect, most of the plants in and around the quarry were plants of dry places - Sand Spurrey *Spergularia rubra*, Least Cudweed *Filago minima*, Early Hair-grass *Aira praecox* and Heath Pearlwort *Sagina subulata*. However there was also a path by the quarry which led down to the sea, and at the upper end was a good patch of Kidney Vetch *Anthyllis vulneraria* with yet another colony of Small Blue Butterflies. It was clearly damper here as there were some very fine specimens of Northern Marsh Orchid *Dactylorhiza purpurella* nearby.

During lunch (near the display of dicynodont's footprints) we were entertained by a couple of 'hairy oobits' - Garden Tiger caterpillars *Arctia caja* - moving at some speed and presumably looking for somewhere to pupate. Afterwards we went down into nearby Cove Bay (a bit of tautology here) where we were delighted to find a couple of patches of Spring Squill *Scilla verna*. The impressive cliffs were built from a series of dunes whose outline could be traced, and were home to numerous patches of Sea Spleenwort *Asplenium marinum*, some at a considerable distance from the sea. Since Sea Spleenwort likes to be bathed in salt spray this says something about the violence of winter storms. There was a nice pebbly beach, and I picked up a rather pretty stone: brown with small white half-moon shaped abrasions, which Bill identified as a piece of flint with concoidal fractures resulting from battering at sea.

Bill Baird found lots to interest us as usual!

Jackie Muscott

UPPER FINDHORN - a breakaway group.

From Sueno's Stone, one carload set off to explore the Findhorn further upstream. Stops were made at two spectacular gorges, Randolph's Leap and Dulsie Bridge. At the former, we were delighted to find Serrated Wintergreen *Orthilia secunda* which had been such a feature of the previous day at Culbin Forest and amazed to see the height, marked by a stone, to which the river had risen during a flood in the past. Botanising at Dulsie Bridge was by using binoculars but we did manage to spot Alpine Lady's Mantle *Alchemilla alpina* in the rocks far below. Upstream, the river flowed across open moorland with only a few Alders and Willows. To our surprise, however, there was a good selection of plants including Melancholy Thistle *Cirsium heterophyllum*, Kidney Vetch *Anthyllis vulneraria* and Wild Pansy *Viola tricolor*, while a family of Common Sandpipers kept us company.

Jean Murray and Mary Clarkson

And another breakaway lot

LOCHINDORB AND LOCH INSH

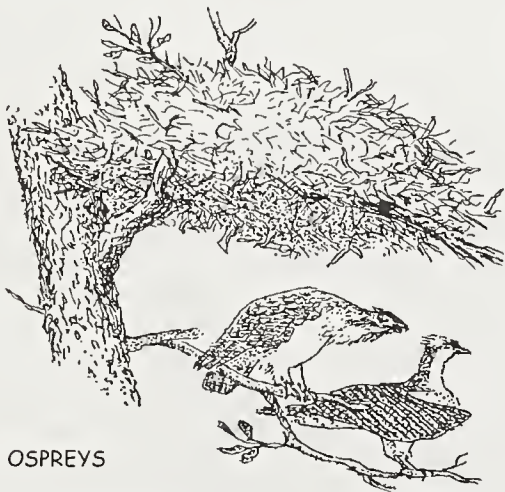
We set off on a fine morning to Lochindorb. On the open moor a colony of Black-headed Gull was raucous while nearby young Birch and Alder sheltered Sedge and Willow Warbler. Farther on a Kestrel hovered and we were entertained by a family of Red Grouse playing 'Now you see me, now you don't' as they moved through the heather. An agitated Curlew drew our attention to a nest surprisingly near the roadside with an adult and several down-clad young close by. As we neared the loch a Stonechat posed resplendent on the gorse.

Black-throated Divers were on the loch, but it was only after watching a suspiciously floating 'rock' near the far shore for some time that the 'rock' raised its head and an adult appeared to feed the young Black-throat. I am sure the abundant Common Sandpipers were not fooled, but passing raptors may have been!

We moved on to enjoy excellent views of Slavonian Grebe their orange and gold plumage and red eyes gleaming in the sun as they slipped softly over the dark water. A Spotted Flycatcher gave us an excellent aerial display for a few minutes.

At Loch Insh we watched with awe as a Heron stood firm during vigorous aggressive passes by a pair of Osprey. He seemed dwarfed by the huge outstretched wings as the birds swooped low over his head. At length the Heron rose slowly and easily and flapped off, leaving the two adult Osprey to perch in a dead tree next to their nest. There was no sign of activity at the nest nor did the adult birds show any interest in it - other than territorial! Maybe the young were fed and asleep. I hope so.

Lyn Corrie



THE TWO OSPREYS

THURSDAY at SPEY BAY

This was a day for the botanists and entomologists, including as it did a variety of habitats (seashore, waste ground, woodland, marsh and riverside) in the course of our walk led by local botanist Ian Green. Along the shore we found Purple Milk Vetch *Astragalus danicus*, now reckoned under threat in England, and more Kidney Vetch *Anthyllis vulneraria*

with more Small Blue Butterflies. Also a cluster of Painted Ladies *Vanessa cardui* and a pair of mating Silver Y moths *Autographa gamma*, both species immigrants, plus one of the propeller-shaped Plume Moths.

A patch of the uncommon fumitory. White Ramping Fumitory *Fumaria capreolata*, was discovered on rough ground, as was a clump of Docks heavily infected with Blackfly. Ants, which sometimes 'farm' aphids for the sake of the honeydew they produce were also present, as were 7-spot Ladybirds for whom aphids are dinner. Quite a nice little eco-system.

After lunch on the lawn at the nearby golf club we started down a track in a conifer plantation, eventually forcing our way through trees not quite old enough to have lost their lower branches, past a scattering of Coralroot Orchid *Corallorhiza trifida* and Common Wintergreen *Pyrola minor*, to an interesting marshy area where a colony of Small Adder's-tongue *Ophioglossum azoricum* was to be found. Here we encountered Dingy Skippers again, and Small Pearl-bordered Fritillaries.

Having forced our way back to the path and a short distance down the road, we turned off down an old railway track lined with Broom *Cytisus scoparius* which formed a tunnel of gold, a most wonderful sight. The track led back to the Spey where we stopped to eat the remains of our lunch gazing over the river shingle where Terns were nesting and an Osprey passed by. On the opposite side of the river one of the party noticed a small dark object picking its way along the water's edge before swimming across the river and disappearing in tumbled rocks below where we sat. It had to be a Mink - bad news for the nesting birds. We also saw more Painted Ladies and a couple of Orange Tip Butterflies.

The route back took us on a path through woodland by the river shingle. A sortie on to the shingle revealed a number of introduced plants: Dame's Violet *Hesperis matronalis*, Monkeyflower *Mimulus guttatus*, tiny plants of Small Balsam *Impatiens parviflora* and the amazing little New Zealand Willowherb *Epilobium brunnescens* which in the course of 100 years has managed to spread throughout the uplands and to penetrate the mountainous areas of Scotland. Native shingle plants included Sea Campion *Silene uniflora* and Northern Bedstraw *Galium boreale* brought down from the hills. In shingle back at the sea were patches of another introduced plant: the old Garden Lupin *Lupinus polyphyllus* which convinced me that all the 'wild' Lupins I had seen previously were the modern garden hybrid *L. x regalis*. Back by the sea we were treated to a display from the Bottle-nosed Dolphins which inhabit the Moray Firth, and then to the Visitor Centre for tea. A perfect end to the day - and to our holiday at Nairn.

Thanks to Ian Green who took 2 days off work to show us around.

Jackie Muscott

Uplifted by the brilliant red colour of the poppies in the fields around Nairn, the final expedition got off to an excellent start, and got better and better as we entered Strath Nairn, a beautiful, lush gently-sloping valley with easily scalable hills. The valley was vibrant with the yellow of the Broom, growing in the fields and lining the rural road for many miles. What a lovely sequence of bright colours - red, green, yellow - to bring precious memories of a lovely day. So, when we came to the RSPB reserve at Loch Ruthven we were in a lovely frame of mind to reap the benefits of being in this fantastic setting. It is a very picturesque loch, stretching east to west and shaped like a boomerang. It is set amongst the very hilly, lake-strewn country above the east shore of Loch Ness. Inverness is the biggest nearby urban area and the loch is well away from the busy A9. This means it is very quiet, peaceful, tranquil and soothing - the perfect place to relax and get away from the speed and bustle of other areas and to feel the healing powers of wild landscape.

Loch Ruthven is one of the most important sites in the country, with many designations in addition to its status as an RSPB reserve. It is also a Special Protection Area (SPA), Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and a Ramsar site.

Ramsar is a place in Iran where, in 1971 at an international conference, the Convention on Wetlands of International Importance came into being. Great Britain signed the convention in 1973. Therefore, a Ramsar site is a statutory nature conservation designation. The UK designates wetlands in accordance with agreed criteria. A wetland is regarded as internationally important if it regularly supports 20,000 waterfowl or 1% of a species, or sub-species of waterfowl. The Ramsar Convention is an international treaty for the conservation and sustainable utilization of wetlands, i.e. to stem the progressive encroachment onto, and loss of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value.

There are a wide variety of habitats on the reserve and surrounding land - heather moorland, agricultural grassland, broad-leaved deciduous woodland especially Birch, coniferous forest, craggy mountain tops, beds of Bottle Sedge *Carex rostrata* in the loch, and the loch itself.

Our quest at Loch Ruthven: to see the Slavonian Grebe. How well we were rewarded! What a spectacular and elegant bird. Such beautiful markings! From the shoreline we saw three of them swimming to and fro. Next thing they were gone, only to appear a minute later from their diving to feed. So fascinated were we with the Grebes that we followed their movements on the water for a very long time, marvelling at their beauty. Most of the breeding

population of this bird is still found within 40 miles of Loch Ruthven, which itself has about half of the United Kingdom population, making it the main breeding site and the most important site in the UK for this bird. It is a rare breed and is a speciality of this part of the Highlands, first nesting here in 1909. It is present from mid-March through to autumn.

It was with great reluctance that we left them to see what else there was in the immediate vicinity of this vantage point.

Around a slight indentation of the shoreline a Willow Warbler and a Spotted Flycatcher were seen, with one of them flitting backwards and forwards across the shoreline. Plants found were Bog Myrtle *Myrica gale*, giving forth a lovely scent; Heath Spotted Orchids *Dactylorhiza maculata* of various shades; Lady's Smock or Cuckoo Flower *Cardamine pratensis* and Chickweed Wintergreen *Trientalis europaea*; Deergrass *Trichophorum cespitosum* and a tall Sedge possibly *Carex binervis*.

Dominating the loch was a massive craggy mountain, haunt of a Peregrine Falcon. However, despite waiting for a good length of time, we left Loch Ruthven without seeing the bird. Suddenly, not long after leaving the reserve, we were charmed by a very pretty sight. This surprise for us gradually unfolded in front of our eyes. First of all two adult Curlews appeared through the thick scrubby grass. Then a tiny little head bobbed up: so here was a family. Turning our gaze backwards another little Curlew appeared, struggling down the side of a deep ditch to rejoin the rest of the family on our side of the road. The spectacle, much to our delight, went on and on, as yet another young curlew from the same family magically appeared fairly near to the parent birds. What a bonus to our earlier sightings of the Grebes! Before returning on our journey homewards, we stopped at Daviot forest, for lunch in the most serene and quiet of landscapes, revelling in the glory of such a pleasing spot. Just on the edge of the forest we found Bugle *Ajuga reptans*, Heath Bedstraw *Galium saxatile*, Tormentil *Potentilla erecta*, Heath Speedwell *Veronica officinalis* and Germander Speedwell *Veronica chamaedrys*. One of my favourite plants, the Juniper, was also growing there.

Final memories of this delightful day were the Long-tailed Tits and Great Tits giving us displays of their aerial prowess as they flew amongst the branches of the trees. To top it all the sweet singing of the Goldcrest was heard. It had been such a fascinating day, seeing much more than I thought we would see. Such a perfect end to the holiday! So much seen!

Roddy Clark



GREAT CRESTED GREBE



SLAVONIAN GREBE

FOOTNOTE: HOW TO IDENTIFY THE SLAVONIAN GREBE FROM THE GREAT CRESTED GREBE. Summer plumage given.

SLAVONIAN GREBE (Horned Grebe): Stiff golden yellow wedge going backwards from behind the eyes and forming ear tufts. Thus forming 'horns' which looks like a hindcrest at end of wedge. This wedge is on a black head. Flat crown, slightly rising at the very back. Rust-red neck and breast and underpart. Rust red flanks on the body. Upper part of body very dark. Length – 12-15 inches Wingspan – 23-26 inches Lifespan – up to 10 years

GREAT CRESTED GREBE: White face around and behind eyes. Behind this is a chestnut frill. Black cap with very prominent black head plumes, extending into a backward facing ruff behind and below the frill. White neck and breast and underpart. Dull, dark back. Length – 18-20 inches Wingspan – 34-35 inches Lifespan – 10-15 years.

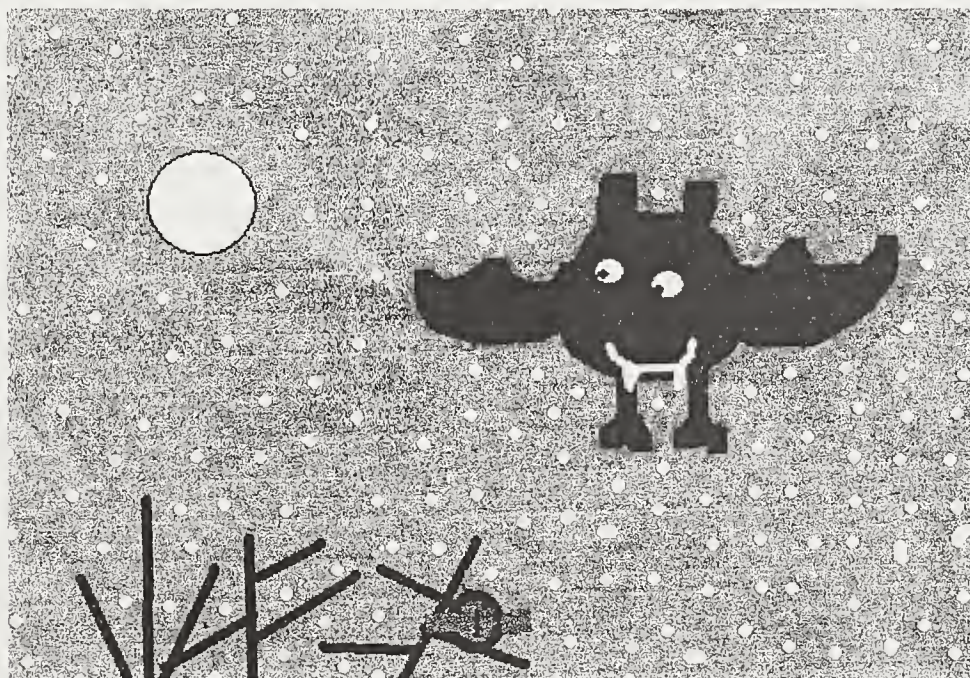
Roddy Clark with acknowledgement to RSPB



REPTILE FOOTPRINTS IN CLASHACH QUARRY - well over 200 million years old

~~~~~

This is Elspeth's Bat







# OBSERVATIONS 2006

## JANUARY

|      |                                                                                                                                                                                                                                                    |    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1st  | A stoat in ermine bounced and bounded through the heather under the pines at Gladhouse, standing out like a sore thumb in the mild conditions.                                                                                                     | NC |
|      | Arctic Redpoll, Aberlady.                                                                                                                                                                                                                          | BC |
| 2nd  | Female Smew, Linlithgow Loch.                                                                                                                                                                                                                      | BC |
| 3rd  | White Crocuses flowering in Charlotte Square.                                                                                                                                                                                                      | MR |
| 13th | Four <i>Lepista nuda</i> , 1 Cream-spot Ladybird, 1 Chequered 2-spot, and a Hoverfly in Dean Cemetery. The 2-spot Ladybird and the Hoverfly were in the same places next day, and the smallest of the Lepistas seemed unchanged over a week later. | DA |
| 14th | First Snowdrops in flower in the garden, Blackhall.                                                                                                                                                                                                | MR |
| 14th | Smew and Little Egret - Vane Farm, on Nats Outing.                                                                                                                                                                                                 | NT |
| 19th | 5 Gannets seen flying over sea near Longniddry.                                                                                                                                                                                                    | MT |
| 22nd | A flock of 25 Purple Sandpipers at St.Baldred's Boat.                                                                                                                                                                                              | NC |
| 23rd | Icelandic Gull, Seafield.                                                                                                                                                                                                                          | BC |
| 23rd | Red-necked Grebe - Duddingston Loch.                                                                                                                                                                                                               | NT |
| 27th | A Black-throated Diver on West Bay, North Berwick.                                                                                                                                                                                                 | MT |



Water Rail at Seafield Pond

## FEBRUARY

|      |                                                                                                                    |          |
|------|--------------------------------------------------------------------------------------------------------------------|----------|
| 3rd  | Kingfisher and Black-throated Diver - Musselburgh Sea Wall.                                                        | NT       |
| 10th | Bittern and Water Rail - Seafield Pond, Belhaven; 52 Waxwings -roundabout just off the A1 at Tranent.              | NT       |
| 10th | 2 Herons walking side by side, following the plough, among the Gulls and Crows, at Dryburgh. A most unusual sight! | LB,MP,SS |
| 13th | First Gannet spotted on the Bass.                                                                                  | MT       |
| 18th | On Fidra, Peregrines seen mating.                                                                                  | MT       |
| 21st | Rough-legged Buzzard, Whiteadder Reservoir.                                                                        | BC       |

## MARCH

March was colder than January. There was snow during the first week. On the 11th and 12th airports in the west were closed, as was Turnhouse.

|      |                                                                        |    |
|------|------------------------------------------------------------------------|----|
| 2nd  | 100s of Gannets on Bass Rock now.                                      | MT |
| 5th  | A Redshank in the Braid Burn, Blackford Glen.                          | JM |
| 7th  | Water Pipit, Musselburgh.                                              | BC |
| 9th  | Guillemots, Razorbills and Fulmars seen on stacks.                     | MT |
| 13th | Lesser Black-backed Gulls returned and were mobbing the Herring Gulls. | MR |
| 15th | Bonaparte's Gull at Montrose.                                          | BC |
|      | More snow which did not last, but a cold north-east wind.              | MR |
| 17th | Sunny but cold. Queen Bumblebee in the garden, Blackhall.              | MR |
| 20th | Red Admiral Butterfly at Hopetoun grounds.                             | MR |
| 21st | 5 Greylags on Fidra.                                                   | MT |
| 26th | Black Redstart seen in North Berwick, and Puffins back !               | MT |
| 27th | Frog spawn in garden pond, Blackhall.                                  | MR |

## APRIL

|     |                                                                                                       |    |
|-----|-------------------------------------------------------------------------------------------------------|----|
| 1st | Black Redstart, Skateraw.                                                                             | BC |
| 3rd | 2 Queen Bumblebees in garden, Blackhall.                                                              | MR |
| 4th | Spring Beauty <i>Claytonia perfoliata</i> in bud and Pansies under trees, Chalmers Street, Lauriston. | MR |
| 4th | 3 Whooper Swans - Duddingston Loch.                                                                   | NT |
| 6th | Kittiwakes seen on stacks, Fidra.                                                                     | MT |
| 9th | First Swallow - Duddingston Loch.                                                                     | NT |



|      |                                                                                                                   |    |
|------|-------------------------------------------------------------------------------------------------------------------|----|
| 13th | Very stormy with showers of rain.                                                                                 | MR |
| 13th | Shags on Fidra seen bonding and nest-building.                                                                    | MT |
| 15th | 2 Peacock Butterflies in garden, Blackhall. First warm day of spring.                                             | MR |
| 20th | Common Sandpiper - Duddingston Loch.                                                                              | NT |
| 20th | Warblers back - Blackcap and Willow Warbler in the Glen, and a Stonechat seen on East Beach dunes, North Berwick. | MT |
| 21st | Discovered a new plant on the Isle of Bute; the bad news: it's <i>Allium paradoxum</i> - Few-flowered Leek.       | JM |
| 21st | Barn Owl - Pencaitland.                                                                                           | NT |
| 26th | Male Ring-necked Duck, Seafield Pond, West Barns.                                                                 | BC |
| 27th | First Swallows seen, North Berwick.                                                                               | MT |
| 28th | Comma Butterfly, Royal Botanic Garden, Edinburgh.                                                                 | LB |
| 30th | First Gannet egg seen, Bass Rock.                                                                                 | MT |

## MAY

|      |                                                                                                                                                                                                                                    |    |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 3rd  | 1st Puffin egg glimpsed., North Berwick.                                                                                                                                                                                           | MT |
| 5th  | Buff-breasted Sandpiper, Aberlady.                                                                                                                                                                                                 | BC |
| 5th  | Eider duck nesting on Fidra.                                                                                                                                                                                                       | MT |
|      | 10 Puffins on the Bass.                                                                                                                                                                                                            | MT |
| 6th  | Spoonbill, Aberlady.                                                                                                                                                                                                               | BC |
| 8th  | 2 Dotterel, Cornethill, Pentlands.                                                                                                                                                                                                 | BC |
| 9th  | Garganey - Musselburgh Lagoons.                                                                                                                                                                                                    | NT |
| 10th | Curlew Sandpiper, Musselburgh.                                                                                                                                                                                                     | BC |
| 10th | Grasshopper Warbler - Hunter's Bog, Holyrood Park.                                                                                                                                                                                 | NT |
| 11th | Orange Tip male Butterfly in garden, Blackhall.                                                                                                                                                                                    | MR |
| 11th | Spoonbill seen again at Aberlady.                                                                                                                                                                                                  | MT |
| 14th | Chiffchaff in Ravelston Wood.                                                                                                                                                                                                      | MR |
| 16th | Nuthatch in trees on sea walk at Hopetoun.                                                                                                                                                                                         | MR |
| 17th | Lesser Whitethroat - Hunter's Bog, Holyrood Park.                                                                                                                                                                                  | NT |
| 17th | Great Crested Grebe pair nest building at Gladhouse reservoir, whilst 9 broods of downy Greylag goslings, 54 in total, wandered the fields nearby.                                                                                 | NC |
| 18th | Whitethroat and Willow Warblers singing at Gullane. Several Orange Tip Butterflies and a patch of Cowslips. Temperature 18°C.                                                                                                      | MR |
| 19th | Hundreds of Brown Silver Line Moths had recently hatched, and merging perfectly into the mounds of dead bracken at Woodhall Dean. The first Adder of the year basked in the spring sunshine at Steel Cleugh - a female, 45cm long. | NC |
| 29th | A Fox with a very young cub in garden at 10pm. Rowan tree in flower.                                                                                                                                                               | MR |



Nuthatch at Hopetoun

## JUNE

|      |                                                                                                                                                                                                                           |          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1st  | Male Orange Tip Butterfly in Cramond car park - lots of Garlic Mustard food plant.                                                                                                                                        | MR       |
| 11th | Painted Lady Butterfly - Holyrood Park. And again on 13th.                                                                                                                                                                | NT       |
| 15th | As we trekked through the woodland by the River Spey on the last full day of the ENHS visit to Nairn an animal skull was found. It was later identified by Elizabeth Farquharson as the skull of a Pine Marten.           | ES       |
| 15th | Great Reed Warbler, Loch of Kinnordy.                                                                                                                                                                                     | BC       |
| 15th | 3 week-old Gannet chick spotted on the Bass.                                                                                                                                                                              | MR       |
|      | Guillemot and Razorbill chicks seen.                                                                                                                                                                                      | MT       |
| 22nd | Eider with young on East Bay, North Berwick.                                                                                                                                                                              | MT       |
| 23rd | 18 full grown Northern Eggar Moth caterpillars basking in the sun near the Lairige Cliffs, Tarmachan. Some may have been the offspring of moths seen in flight in 2005; they will pupate over winter and fly next summer. | MC,JM,SS |
| 24th | 2 more Northern Eggar caterpillars en route to Stuch'd an Lochain, Glen Lyon.                                                                                                                                             | MC,JM,SS |
| 27th | A big hatch of Yellow Shell Moths at Longniddry Bents : c.50 disturbed in the Brambles and tall ruderals : around 30 Silver Y Moths are perhaps the start of an invasion. They were!                                      | NC       |



JULY

|             |                                                                                                                                                                                                                                                                                                                                                |                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|             | An exceptionally dry month.                                                                                                                                                                                                                                                                                                                    |                |
| 1st         | Three Northern Marsh Orchids in a neglected front garden in Melbourne Road, North Berwick.                                                                                                                                                                                                                                                     | MR             |
| 2nd         | Torrential downpour, with thunder all night followed by haar all next day. Heatwave elsewhere.                                                                                                                                                                                                                                                 | MR             |
| 5th         | Female Marsh Harrier, Musselburgh.                                                                                                                                                                                                                                                                                                             | BC             |
| 7th         | 2 Arctic Skuas seen chasing a Sandwich Tern over East Bay, North Berwick.<br>Young fledged Peregrines on Fidra.                                                                                                                                                                                                                                | MR<br>MT       |
| 12th        | The first juvenile Great Spotted Woodpeckers (2) and Tree Sparrows (2) of the season on the garden feeders, Milton Bridge, Penicuik.                                                                                                                                                                                                           | NC             |
| 14th        | Black Stork, Grantshouse.                                                                                                                                                                                                                                                                                                                      | BC             |
| 16th        | Burnet Saxifrage and Harebell in flower on cliff slope. House Martins nesting on cliff beside Fulmars., Nats outing to Seacliff near Tantallon.<br>Midst a fluttering mixture of Butterflies: Small Heath, Ringlet, Meadow Brown and Common Blue on the Cockmuir verge; Melancholy Thistle <i>Cirsium heterophyllum</i> capitula exceeded 130. | MR<br>NC       |
| 17th        | Temperature 27C. Heatwave began Friday 15th July; exceptionally hot.<br>Hummingbird Hawkmoth - Holyrood Park.<br>From the scrape hide at Musselburgh Lagoons, I had a close-up view of a Grey Heron consuming a Grey Partridge chick whilst the hapless parents ushered the remaining two away.                                                | MR<br>NT<br>NC |
| 18th        | Black Guillemot, Musselburgh.                                                                                                                                                                                                                                                                                                                  | BC             |
| 20th        | Bus trip to Holy Isle: the star plant was Marsh Helleborine in beautiful flowering condition. Hundreds of Marsh Orchids and Pyramidal Orchids; Dark Green Fritillary Butterflies in abundance. Yellow Underwing Moth, Six-spot Burnet Moth seen; and Cinnabar Moth caterpillars on Ragwort.                                                    | MR             |
| 25th        | Comma Butterfly at Longniddry Bents.                                                                                                                                                                                                                                                                                                           | LB             |
| 28th        | 11 different species of Butterfly noted on the coast near Coldingham, including 16 Graylings and 1 Northern Brown Argus. There were also Silver Y Moths.                                                                                                                                                                                       | MC,JM          |
| 28th        | Puffins on sea more than on land, North Berwick.<br>Osprey seen perched on dead tree on Berwick Law.<br>Bottle-nosed Dolphin seen between Craigleith and the Bass.                                                                                                                                                                             | MT             |
| 30th        | Nice damp patches at Lochore Country Park had many Blue Damselflies in the grasses.                                                                                                                                                                                                                                                            | MR             |
| 30th-1stAug | A borrowed light trap, enabled me to record these wonderfully named Moths in the back garden : Burnished Brass, Antler, Rose Tortrix, Common Wainscot, Shaded Broad Bar, Scalloped Oak, and others including inevitably Silver Y.                                                                                                              | NC             |

AUGUST

|          |                                                                                                                                                                                                                                                                                                                                                            |      |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Aug/Oct. | Buddleias have attracted many Silver Y Moths and Peacock, Painted Lady, Red Admiral and Small Tortoiseshell Butterflies. There were lots of Large Whites in the garden but they were not often drawn to the Buddleias, Peebles.                                                                                                                            | E&EP |
| 3rd      | Peacock, Red Admiral, Large and Small White Butterflies on Buddleia.                                                                                                                                                                                                                                                                                       | MR   |
| 5th      | Ettrick Marshes Nats outing highlights: Baby swallows on telephone wires.<br>Scotch Argus Butterflies, usually farther north; Horntail Wood Wasp; Chanterelles under Beech and Birch. Melancholy Thistle. We watched a lovely Siskin feeding on Birch seeds. Bifid Hemp-nettle <i>Galeopsis bifida</i> (has a notch on lower petal) identified by Neville. | MR   |
| 5th      | On Ettrick Marshes, Figwort <i>Scrophularia nodosa</i> well chewed by larvae of the weevil <i>Clonus</i> sp. which are surrounded by a grey gelatinous secretion.                                                                                                                                                                                          | JM   |
| 9th      | Painted Lady on Buddleia in garden, Blackhall, and stayed most of the week. Silver Y Moth frequently seen.<br>Countryside and gardens parched for want of rain, and the heat. Plants and trees stressed, saplings dying, leaves falling, grass burnt. Flocks of Long-tailed Tits moving through garden trees in Craigcrook Road, Blackhall.                | MR   |
|          | Willow Warbler in my garden trees, Blackhall for several days.                                                                                                                                                                                                                                                                                             | MR   |
| 11th     | Wood Sandpiper (2) - Musselburgh Lagoons.                                                                                                                                                                                                                                                                                                                  | NT   |



- 16th Quantities of the Buoy-making Barnacle *Lepas fascicularis* swept up on shore and into rock pools near the Giant's Causeway, Northern Ireland. This Stalked Barnacle does not attach itself to anything, but secretes its own float. It lives in the SW Atlantic and we wonder if it's unusual to find it so far north. MC,JM
- 17th Very heavy overnight rain, the first for several weeks. MR
- 18th Common Seal in partial moult seen on Craigleith. MT
- 20th At Mavisbank the bases of Douglas Firs sported a large number of *Phaeolus schweinitzii*, a fungus much coveted for its dyeing properties. Chicken-of-the-woods *Laetiporus sulphureus* was also found in several places in and around the estate. ES
- 21st Small Copper Butterflies and a Painted Lady in garden, Blackhall. MR
- 28th Clouded Yellow Butterfly at Cobbinshaw Reservoir, West Lothian. LB, EG, MP,SS
- 29th Near Earlston: a number of 5th instar Bronze Shieldbug nymphs *Troilus luridus* on Nettles. These are predatory bugs; were they eating the green leaf beetles also present? MC,JeM,JM
- 31st Seventeen sightings of Holly Blue Butterflies nectaring on late Snowberry flowers at Lasswade - probably represent at least 8 individuals; another new Butterfly for Scotland! NC

SEPTEMBER

- 1st Icterine Warbler and Wood Warbler on Isle of May. MT
- 2nd A species of Ergot *Claviceps nigricans* found on Common Spike-rush *Eleocharis palustris* growing in damp hollows in the dune slacks East of Lossiemouth. No fewer than 8 Herons fishing on the River Lossie near the lagoon at its mouth. MC,JM
- 4th Large amounts of Bearberry *Arctostaphylos uva-ursa* on Creag Bheag near Kingussie - mostly in fruit, some in flower(!) and some infected by a rare fungus *Exobasidium sydownianum*. MC,JM
- 4th Pectoral Sandpiper, Tynninghame. BC
- 8th Gugas (young Gannets) leaving the Bass. MT
- 9th Minke Whale and a Porpoise seen NE of the Bass. MT
- 17th A Hawthorn Shield-bug *Acanthosoma haemorrhoidale* noted by the Union Canal, near Birdsmill. A few days later another flew into my room in Marchmont, after dark, attracted by the light. I evicted it 3 times and finally shut the window. JM



BRONZE SHIELDBUG  
(5th instar; Pale green to rosy pink & black)



HAWTHORN SHIELDBUG  
(Green and dark brown)

- 20th Warm, stormy weather with sunny intervals. Painted Lady Butterfly seen 21st to 23rd and last sighting 28th. MR
- 21st About a dozen Swallows still at Hopetoun. MR
- 29th Comma Butterfly - Holyrood Park. NT
- 29th Heavily pregnant Grey Seal close inshore, Isle of May. MT
- 30th A dead female Blackcap which had apparently collided with a glass window at Peebles. It has been a bad year for this sort of fatal accident, as we also had a cock Pheasant and two Song Thrushes which seemed to have met the same sad end. Our next door neighbour has found three Greenfinches dead in similar circumstances. E&EP

OCTOBER

- 2nd Buzzard flying low over Corstorphine Hill. First Geese of winter overhead. Weather: hottest July and warmest September on record after a very cold May. MR
- 2nd A large *Inonotus dryadeus* fungus at the base of a mature Oak in the grounds of Culzean Castle caught the attention of the car-driver who brought the vehicle to a halt and leapt out! This fungus is a polypore which weeps 'golden tears'. ES
- 3rd Scaup - Musselburgh Lagoons. NT



|      |                                                                                                                                                                                                                                                                                      |      |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 4th  | Red Admiral on Hydrangea flowers in garden, Blackhall, and Silver Y Moth still around.                                                                                                                                                                                               | MR   |
| 5th  | Comma Butterfly - Swanston.                                                                                                                                                                                                                                                          | NT   |
| 6th  | Kingfisher - Duddingston Loch.                                                                                                                                                                                                                                                       | NT   |
| 6th  | Working at East Lammermuir Deans today, collecting the electric fences which protect the breeding sites of Northern Brown Argus, sadly not doing well. Dismayed to see hundreds of Red-legged Partridges and Pheasants released for 'sport'. Collected sacks of expended cartridges. | NC   |
| 9th  | European Roller, Beal, Northumberland                                                                                                                                                                                                                                                | BC   |
| 10th | First Seal pup born on Isle of May, seen on camera.                                                                                                                                                                                                                                  | MT   |
| 11th | Painted Lady, Red Admiral Butterflies and Silver Y Moth still around, at Blackhall. Last sighting 22nd.                                                                                                                                                                              | MR   |
| 15th | Painted Lady Butterfly - Holyrood Park.                                                                                                                                                                                                                                              | NT   |
| 22nd | Red Admiral Butterfly - Holyrood Park.                                                                                                                                                                                                                                               | NT   |
| 22nd | <i>Daedaleopsis confragosa</i> at the base of Swedish Whitebeam in Cramond Road South. This is a corky bracket fungus with a slot-like structure on the underside.                                                                                                                   | ES   |
| 22nd | A group of at least 20 Fly Agarics <i>Amanita muscaria</i> in private grounds at Barnton.                                                                                                                                                                                            | ES   |
| 23rd | A Nuthatch fed on peanuts in our garden in Peebles.                                                                                                                                                                                                                                  | E&EP |
| 24th | Shore Lark - Musselburgh Lagoons.                                                                                                                                                                                                                                                    | NT   |
| 28th | Gannets still to be seen on the Bass.                                                                                                                                                                                                                                                | MT   |

NOVEMBER

|      |                                                                                                    |      |
|------|----------------------------------------------------------------------------------------------------|------|
| 1st  | Red Admiral Butterflies were feeding on our <i>Buddleia globosa</i> after a sharp overnight frost. | E&EP |
| 9th  | Only 2 Gugas remaining on Bass Rock.                                                               | MT   |
| 11th | Comma Butterflies still on the wing - at Burton-on-Trent.                                          | JM   |

DECEMBER

|      |                                                                                                                                                                                                            |       |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 7th  | Only 5 Seals left on Isle of May.                                                                                                                                                                          | MT    |
| 16th | Herb Robert <i>Geranium robertianum</i> in flower - Holyrood Park. Still in flower on 14th February.                                                                                                       | NT    |
| 18th | Otter - Duddingston Loch.                                                                                                                                                                                  | NT    |
| 20th | A Kingfisher by the Water of Leith at Juniper Green, and a few yards farther on, 4 Roe Deer.                                                                                                               | JW    |
| 26th | Red Campion <i>Silene dioica</i> in flower in Puddle Wood near Ormiston - not so unusual in recent years - but it was infected with Violet Anther Rust <i>Ustilago violacea</i> , the latest we have seen. | MC,JM |

|     |                |    |                  |      |                     |
|-----|----------------|----|------------------|------|---------------------|
| DA  | David Adamson  | LB | Lyn Blades       | MC   | Mary Clarkson       |
| BC  | Bill Clunie    | NC | Neville Crowther | EG   | Ena Gillespie       |
| JeM | Jean Murray    | JM | Jackie Muscott   | E&EP | Eric + Eileen Perry |
| MP  | Margaret Perry | MR | Mary Robertson   | ES   | Eunice Smith        |
| SS  | Sandra Stewart | NT | Natalie Taylor   | MT   | Mary Tebble         |
| JW  | Janet Watson   |    |                  |      |                     |

Remember Mrs McNamara, Eileen Perry's Snowdrop which bloomed on 9th December 2004 and on 20th December 2005? Well in 2006 it first flowered on 20th December and is still flowering on 27th February 2007 !





## WINTER TALKS

25th January

### A WANDERING PLANT PHOTOGRAPHER in EUROPE

*Sidney Clarke - Former Principal Photographer, RBGE*

Sidney Clarke called himself *a wandering plant photographer* and gave us a tour of Europe, starting in Spain and Portugal, and reaching the eastern end of the Mediterranean, via the Alps in June and July; Italy, Albania, Greece, Cyprus, Turkey.... and showing photos of beautiful and very rare Narcissus; square miles of Crocuses in Spain, Fritillaries, Potentillas .... I began to write the names, struggling to watch at the same time, but gave up, because the photos just had to be admired. A delightful tour.

*Sandra Stewart*

22nd February

### THE ORIGINS of LIFE on EARTH

*D.E.S. Truman*

Can the question of the origin of life be answered by scientific analysis? The speaker proceeded to develop the argument in favour of this line of enquiry, pointing out that we must use our knowledge of the present for the purpose. In the fossil records, the earliest detectable life forms, the cyanobacteria, are found in Precambrian rocks, around 3465 million years old. Prior to this era, ancient rocks around 3800 million years old are remarkable for their carbon content, a basic element of living systems.

A comparison of all living organisms from bacteria to mammals strongly suggests descent from a common ancestor. They share features at the cellular and molecular level in their metabolic processes and their ability to replicate under the direction of a common genetic code. Experimental approaches have shown that bits of the life processes can be simulated in the laboratory, from the synthesis of amino acids to the formation of cell-like droplets enclosed in membranes. A model for cellular origin proposes that organic molecules produced on earth, or coming from meteorite bombardment, interact then become concentrated within membranes. Accurate replication of these entities would follow with genesis of nucleic acids encoding precise instructions for metabolism. At the present time, organisms that thrive in the hot, oxygen-free conditions of volcanic vents and springs in the ocean floor point to the possible existence of primitive life in the hostile atmosphere of early earth.

Though many questions remain, the audience came away with the feeling that scientific methods can offer a possible explanation of our origins. Our thanks are due to Des for entertaining the Society to a thought-provoking evening.

*Margaret Perry*

22nd March

### VOLCANOES - WINDOWS INTO THE EARTH'S INTERIOR

*Fiona McGibbon Grant Institute of Geology*

Volcanoes are windows into the Earth's interior for many reasons, but chiefly because they literally plumb the depths. They result from melting deep within the Earth and bring magmas to the surface reflecting in their compositions, the chemistry of their sources. This magma can also carry solid samples (or *xenoliths*) from the deep interior to the surface, giving geologists a rare opportunity to directly sample the inaccessible depths.

Volcanism on the Earth exists in many plate tectonic settings; along the mid-ocean ridges, above subduction zones (e.g. Pacific 'Ring of Fire'), in intracontinental rifts (e.g. East African Rift) and in isolated intraplate settings (e.g. Hawaii). The range of magma compositions in each of these settings varies as a result of differing source composition, differing depth of melting, and differing melting processes. The silica content of these magmas varies with dramatic consequence. High silica magmas, typical of subduction zone settings, are more viscous and therefore less able to de-gas leading to dramatic explosive eruptions (e.g. Mt St. Helens, 1980) and thick lava flows that do not travel far down the volcano flanks. Basaltic volcanoes on the other hand, such as Mt Etna, produce magmas that are lower in silica, much hotter (over 1000°C) and so less viscous, with eruptions characterised by fire-fountaining and long, relatively fluid, lava flows. The influence of plate tectonic setting on composition and eruptive style is very useful when studying ancient volcanic rocks such as those of the Edinburgh area, as it allows one to recognise the ancient geological setting.

The talk took a closer look at the eruptions of Mt St Helens in 1980 and Mt Etna in 2001. Slides of a range of volcanic features (pahoehoe and aa flow types on Hawaii, volcanic bombs etc), as well as the ice towers of Mt Erebus (Ross Island, Antarctica) were shown. These ice towers form as steam which is emitted in the fumarole fields of this volcano and freezes as it meets the freezing atmosphere.

*Fiona McGibbon*



27th September

## THE BOTANICAL SOCIETY OF THE BRITISH ISLES IN SCOTLAND

*Jim McIntosh, BSBI Scottish Officer*

The BSBI is the leading charitable voluntary organisation promoting the study and enjoyment of British and Irish wild plants. It was founded in 1836, and aims to improve the understanding of British and Irish plants to help in their conservation.

It has over 3,000 members across Britain and Ireland with some 300 in Scotland. The network of 152 Vice-county Recorders - 40 in Scotland - are supported in their botanical record collecting, checking and curation work by a network of species experts and 2.5 staff – including the BSBI Scottish Officer. His four year SNH grant-aided post (now mid-term) aims to promote interest in botany in Scotland, support the BSBI Scottish membership and help deliver major SNH and BSBI conservation initiatives.

One such initiative is SNH's Site Condition Monitoring work – to assess the state of Sites of Special Scientific Interest notified for their rare flowering plant populations. Over the past three years BSBI volunteers and staff have surveyed 32 sites. Arthur's Seat was given as a local example. Here some of the rare plant populations - those of Spring Sandwort - are at threat from gorse encroachment. Our reports highlight such issues and will be used to improve matters.

Scottish BSBI Vice-county Recorders (VCRs) hold over 1 million flowering plant records on paper. Getting them computerised is important – it helps VCRs map and manipulate them. It also makes them more widely available so conservation staff can take informed decisions which protect rare plant populations. We have just completed a pilot project, using SNH funding to pay computerising contractors. It included 50,000 records in West Lothian for Jackie Muscott. We are planning further initiatives to computerise more.

The presentation concluded with a summary on how interested ENHS members could develop their interest in botany, and a lively discussion followed. I would like to thank Margaret Perry for inviting me to speak and to all those who came to listen.

*Jim McIntosh*

25th October

## SCOTLAND - LAND of LICHENS *Chris Ellis (See Article on Page6)*

22nd November

## PRIMATE CONSERVATION IN UGANDA

*Charlotte Macdonald, Royal Zoological Society of Scotland*

Budongo Conservation Field Station is located in the South-west corner of Budongo Forest in Uganda. The forest itself is a forest reserve which is selectively logged but continues to support a high diversity of birds and mammals. The field station is the base for a long-term research programme looking at the behaviour of a community of habituated chimpanzees, the development of the habitat under the selective logging strategy and the use of the forest by other species of animals including monkeys, birds and reptiles.

The field station was set up in 1990 by Professor Vernon Reynolds, then of Oxford University. It was known as the Budongo Forest Project until late 2005. It is one of only 6 long-term chimpanzee research sites in Africa and the data collected by many staff and scientists over the years has contributed greatly to our knowledge of this species and our need to help protect not only the chimpanzees but the habitat itself and all the animal and plant life within the forest.

The project also plays an important role in the local communities as the financial health of many families relies on continued employment. The Royal Zoological Society of Scotland became the core funder of the field station in July 2005 and has taken on the role with strong financial, professional and expert support.

*Charlotte Macdonald*





## ACKNOWLEDGEMENTS

The Editors thank Elizabeth Farquharson, Jackie Muscott and Margaret Perry for proof reading.

We must also thank Jackie Muscott and Eric Perry for their lovely drawings, which greatly enhance the text.

We are sure that you will all agree that the photographs are lovely. The people we have to thank are:

|    |                          |    |                  |
|----|--------------------------|----|------------------|
| PA | Patrick Adamson (age 13) | NC | Neville Crowther |
| JF | Joanie Fairlie           | RH | Roger Holme      |
| MP | Margaret Perry           | DS | Dorothy Stuart   |
| JW | John Watson              |    |                  |

Well over 40 people write articles, do outing reports and send us observations. We are very grateful for these contributions to the Journal.

If you wish you can e-mail your contribution to [journal@edinburghnaturalhistorysociety.org.uk](mailto:journal@edinburghnaturalhistorysociety.org.uk) If you do not have e-mail, you can send e-mails from any Library, and there is usually a Librarian on hand to help you.

Otherwise, give your contribution to Sandra Stewart or Lyn Blades with outing reports to Lyn, please.

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## BACK NUMBERS OF JOURNALS

The Society keeps a supply of back numbers in store as from time to time requests are made, either by individuals or libraries, for a complete set or for a particular year. Until now our reserves have been adequate, but we are now down to unacceptably low levels of 4 copies for 1995, 1 copy for 1998 and 3 copies for 2000. If anyone has unwanted copies of these years we would be very grateful if you would let us have them. Please contact *Elizabeth Farquharson*.

### THE SOCIETY'S LIBRARY

I usually attend the winter indoor meetings and bring along a small selection of books to show and lend. Any member wishing to borrow a particular volume should ring me 7 days prior to the meeting. At other times, or if a book is required urgently, please make contact and we may be able to work something out. Members wishing a copy of the catalogue can ring me for one - cost : £1.50 + Postage. ( or free by e-mail ).

*John Watson Librarian Tel: 0131 449 3693 ; e-mail : watsons@currie95.fsnet.co.uk*

### THE SOCIETY'S EQUIPMENT

In addition to books held in the Library, the Society has various other items which can be borrowed by members for their private use, including LP records of birdsong with accompanying booklet, and a recording of Grasshoppers.

Needless to say, members will be responsible for the care of books and equipment on loan.

|                      |                                                                                                                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Telescope:           | A Bushnell Spacemaster of 20x - 40x magnification, in carrying case and a car window-mount for in-car use. Apply to Grace Jamieson , Tel: 0131 453 3434                                                   |
| Microscopes:         | High and low power microscopes. Apply to Margaret Perry (Tel. 0131 447 3515)                                                                                                                              |
| pH Meter:            | Apply to Elizabeth Farquharson (Tel. 0131 447 1994)                                                                                                                                                       |
| Mammal Traps:        | Twenty-four small-mammal traps. Apply to Elizabeth Farquharson (Tel: 0131 447 1994)                                                                                                                       |
| Photographic slides: | A comprehensive slide collection left to the Society by Janet Raeburn. The subjects are mostly botanical but also include birds, mammals, butterflies and Scottish scenery. They are kept in the Library. |
| Bawsinch Key:        | The Bawsinch Nature Reserve at Duddingston is managed by the SWT, who allow the Society to hold a key for members. Apply to Joanie Fairlie, Secretary Tel.: 0131 668 1470                                 |
| Computer Scanner:    | Apply to Sandra Stewart (Tel: 0131 441 2641)                                                                                                                                                              |
| Overhead Projector:  | Apply to Betty Smith (Tel: 0131 440 0888)                                                                                                                                                                 |
| Slide Projector:     | Apply to Elizabeth Farquharson (Tel. 0131 447 1994)                                                                                                                                                       |









